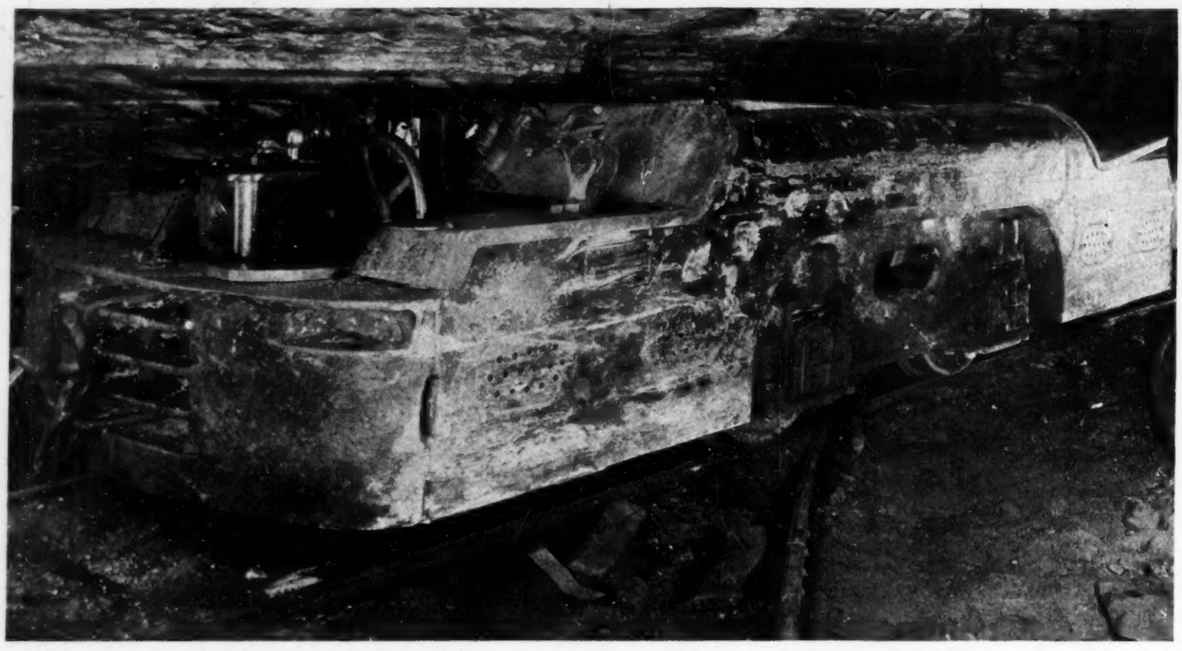

One of the haulage motors at Victoria Coal Company, whose battery gave three years of service without causing the chief electrician a bit of trouble

THREE YEARS with no battery trouble

A record that is not at all unusual for Exide-Ironclad Batteries

LIKE all Chief Electricians, Earl Stover of the Victoria Coal Company, Butler, Pa., has his worries and troubles, but none of them are caused by locomotive batteries.

Mr. Stover's motors are equipped with Exide-Ironclad Batteries. One of these motors is pictured above. Mr. Stover writes us about its battery as follows:

"We have had almost three years' continuous service from this battery without any trouble."

This record for trouble-free service is in no sense unusual. In fact, it has been duplicated by Exide-Ironclad Batteries at a great many mines. Down at Page Coal & Coke Company in West Virginia, for instance, they renewed two Exide-Ironclad Batteries. Mr. E. H. Evans, General Manager of the company, wrote us this about these batteries:

"During the entire life of the two Exide-Ironclad Batteries that we renewed we had absolutely no repairs to make except the usual very minor repairs."

The Exide-Ironclad stays out of the repair shop because it is rugged—specially built for mining work. It has plenty of power for steep grades and lots of speed for level track—right up to the end of the day. It is efficient on charge; its first cost is reasonable, and its life long.

Send for complete information on this cost-cutting battery. Ask for Form 1791, "Facts for Consideration in *Selecting a Battery* for Locomotive Service."

Exide IRONCLAD BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia

Exide Batteries of Canada, Limited, 153 Dufferin Street, Toronto

Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

Volume 28 — New York, October 15, 1925 — *Number* 16

COAL AGE

With which is consolidated "The Colliery Engineer" and "Mines and Minerals"
R. DAWSON HALL, *Engineering Editor*

Fourteen!

EVERY COAL MINING MAN who has "the spark" within him, takes deep joy in making a contribution to the art of winning coal. He works out a method, perhaps, of increasing extraction a precious 2 per cent. He tells it to the whole industry in a six-page article. The achievement and the six pages give him a buoyant feeling of satisfaction. What then, is the feeling that comes from devoting not six but 30,204 pages to the service of the industry?

Coal Age IS FOURTEEN years old with this issue. During those fourteen years it has striven, in 30,204 pages of editorial matter, to be a forum for the best thought of the industry. Advances in mining, improvements in machinery, new conceptions in management, in safety, in sales and in the whole, varied, stupendous task of conducting the business of producing and distributing the nation's coal have been set forth in these pages. This has been *Coal Age's* life work. It will continue to be the work of the magazine during coming years.

TODAY WE FEEL as we did Oct. 14, 1911 when, in Vol. 1, No. 1 the foreword said, in addressing the million men of the industry: "With your co-operation, we will be instrumental in putting the industry on a higher, safer footing. Your friendship is sought, but your confidence is desired above all. We will persist in our right to be independent even at the expense of criticism and censure. Realizing that, 'A friend to all is a friend to none,' we expect opposition; such, however, will but add zest to our work."

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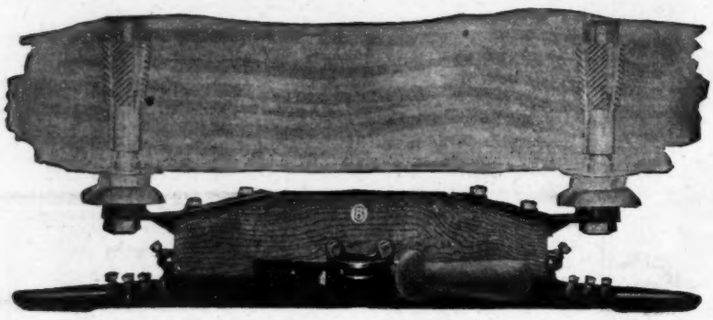

Localize Haulage Interruptions

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Let us help you sectionalize your mine to the best advantage.

O-B Type M Switches pay for themselves many times in mine-hours of haulage saved

The Ohio Brass Company
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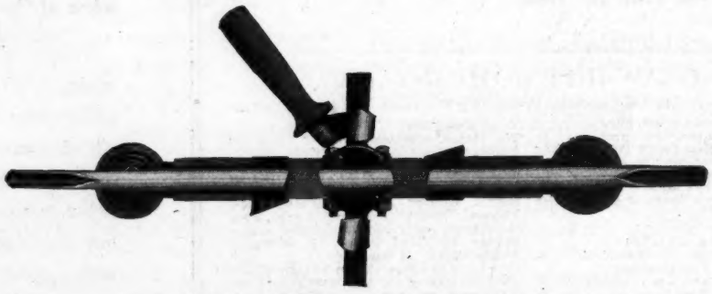

With the switch open, the fixed center runner-piece permits free passage of the trolley wheel.

OB TROLLEY MATERIAL

COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
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Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

R. DAWSON HALL
Engineering Editor

Volume 28 | NEW YORK, OCTOBER 15, 1925 | Number 16

You Cannot Browbeat an Economic Law

OF COURSE, the anthracite operators seriously fear a possible wage increase or any change in working conditions which will raise the price of anthracite coal. They are having trouble now in holding their market. Oil, coke and bituminous coal are coming in where they never came in before. Any increase in price will make anthracite still harder to sell and will narrow its market. The public will buy the cheaper article when the price goes low enough to offset, in its opinion, the advantages of hard coal.

In other words, the operators are up against an economic law. Moreover, they know that they are "up against it." How long before the miners wake up to the fact that they too are up against the same economic law? Its operation is inevitable: Less sales, less mining; less mining, less work. And eventually the result will be, if prices continue to rise: no sales, no mining; no mining, no work.

Even under present conditions, without any new increase in wages or additional burdensome working conditions, the operators, in order to hold what markets they have, must secure the utmost economies in operation. But the major economic law that stares the industry in the face is the thing that cannot be escaped and must be appreciated by both parties to the industrial partnership—operators and miners. The operators have an appreciation of it. The miners need to wake up.

Labor unions may be able to force exemptions from legislative bodies, but they cannot browbeat an economic law.

Day Wage and the Public

WHENEVER COAL STRIKES agitate the public, as well they may, the question asked is: What do miners receive? The answer is not any too satisfactory. The inquirer is told that the lowest day wage is $4.62 or $7.50 as the case may be, but he becomes suspicious when the informant cannot give actual daily wages for the most numerous bodies of workers—miners, mine laborers and loaders. "There is something queer about this," he feels. "I know the wages of bricklayers and plasterers, why this difficulty in ascertaining miners' wages?"

So he is quite greedy to hear what Mr. Lewis, the mine workers' champion, has to say. Mr. Lewis quite plausibly bases his statement on the U. S. Coal Commission report, overlooking the fact that this Commission was unable to follow the miner from job to job and so shows far more men at work in mining than the mines contain and the wages per man per year much lower than the mine workers actually receive.

If each man had a day wage there would be less dispute and that is what we are coming to, as machines are being introduced. When the mines are mechanized so as to make the work easy all men will be paid, it is to be hoped, a day wage. When any one is asked what is the wage, the answer will be forthcoming without any dubious note or lengthy explanation.

Some have doubted whether a day-wage mine can be made successful, but the attempt to run a mine that way has been tried, and both men and management are enthusiastic. Not a tonnage man is on the job, and every man employed is sure that whether the mine cars come or fail to come promptly he is assured of a certain day's pay. The operator has accepted the uncertainty in place of the miner, and there is no sign that he regrets his choice.

Clean Up Airways

IN MINES where men are allowed to travel the haulageways, the other air passages, whether intake or return airways, are permitted too often to become cluttered with fallen rock, making the burden on the fan unduly heavy. In many cases this rock is removable only with difficulty because the rails have been lifted, and concrete stoppings make the airways relatively inaccessible. They become unsafe and difficult to travel so that after a while no one cares to traverse them. Eventually their condition becomes so bad that the fan has to be speeded up.

It would be more profitable to keep such places properly cleared. The falls being removed, the airway would be enlarged, and ventilation would be aided rather than hindered. Many a mine becomes progressively difficult to ventilate because of the continued decrease in the capacity of the airways owing to falls and to the heaving of the floor. As the cleaning of such air passages is expensive the work on them is delayed in time of low coal price so as to cut cost. When there is a demand for coal, the job already has become too large for any one to attempt without risk of running up the cost unduly. Moreover, the handling of rock requires the labor of men who might otherwise produce coal and absorbs the capacity of cars that might be used for the haulage. Furthermore, the rock cars absorb the capacities of the haulageway, shaft, and motive power and cause delays on the surface. So the job is again delayed and in the end is never performed.

Cleaning up airways is a part of normal operation and should be so regarded. Delay in performing such work should not be tolerated unless either there is a prospect that a new shaft will be sunk that will make the airway useless or there is a likelihood that the airway will shortly be dispensed with and the pillars drawn. Even then a clear airway will make the pillar drawing easier and will enable the coal to be removed free of pieces of broken débris.

Ventilation is a continuing operation, a constant drain on the operator's pocket, and should be met by persistent vigilance. In most mines few see the condition of air courses. They are not places that managers or executives visit, and it is in them, often, that

hundreds of dollars of wasted power are concealed in the interest of temporary and fancied economy. Cleaning up airways is one of those longer-visioned economies that subordinates are apt to overlook in their efforts to keep down the charges on the daily cost sheet. "Men come and go," say they, "why worry about future ventilating problems?"

With instruments that measure water gage and power consumption, however, the progressive wastes in airways which become cluttered with rock can be watched and appropriate action taken.

Small Cars, Low Profits

NO NIGGARDLINESS is more expensive than to use cars smaller than roof conditions make necessary. A railroad using the equipment of twenty-five years back would be in the bankruptcy courts, but many mines are still struggling along with the equipment that was modern a quarter century ago, when cars were built, high, short and narrow. A modern car reduces gathering charges, gives the miner a better opportunity for loading and lowers main-haulage costs. A mine with a narrow gage can make no better investment than to relay the track, scrap the cars and locomotives and buy standard equipment, large enough to justify introducing the new constructional improvements such as housed wheels, spring draft rigging, roller bearings, etc., that go with such cars.

There are limits, of course, especially in gaseous mines and in those with weak roof. Where brattice cloth is used at the face of entries a wide car may leave insufficient room for the intake or return current and for the posts by which the brattice is sustained, particularly where the roof is such as to make the entry and crosscuts narrow. But it is evident that small cars are often used where there are no such reasons for keeping their size down to existing limits.

Where a company has a narrow gage all its newly purchased equipment as well as its old must conform with standards out-of-date, unduly expensive and unprofitable in operation. Hence a change must be made sooner or later in the interest of economy, so why not make it now? By not delaying, the advantage can be obtained at once. Surely if the mine is going to continue producing for years under present methods it does not pay to delay making the change, thus deferring the profit and making the revision, when it does come, the more expensive. Unless methods of mining are radically changed never will the trackage be shorter than now, never will the number of cars, frogs and switches be less than today.

With mechanical aids comes a demand for larger cars and an opportunity for concentration. The latter assures a reduction of trackage, and when that is made it is a good time to change gages if they are too narrow. No one who tries out mechanical aids in loading, whether loaders or conveyors, really knows what these can do if the tests are made with inadequate cars.

Some years back, Samuel Dean, an English engineer, long domiciled in America, said to his British friends in a technical paper delivered in England that the reason for American efficiency could be found in the large car. His suggestion is still good, though he has been dead many years. Why trifle with problems of loading, transportation, hoisting and dumping by using cars of inadequate size?

Pooling Experience

THE annual meeting of the West Virginia-Kentucky Association of Mine, Mechanical and Electrical Engineers will probably not be held this year. This cancellation is to be regretted. In a time like the present, when rock-bottom costs are essential, conferences of mine mechanics and electricians are of their greatest value.

Operators are depending on developments of mechanical and electrical equipment to reduce production cost. Selection, installation, inspection and maintenance of that equipment are all highly important factors contributing to the overall net result—lower cost per ton. Theory is valuable but experience is absolutely necessary, although sometimes costly. Men who must learn everything first-hand instead of profiting by the failures and successes of their neighbors are limited in the service they can render.

Meetings of virile associations of technical men offer them opportunities to increase their value to themselves and their employers. Operators the country over should see to it that such associations *are* kept virile. They can do this by sending one or more men from each mining company instructed to contribute freely of the company's experience—and to bring back worth-while ideas. The cost of sending these men should be a sound investment.

Put Yourself in His Place

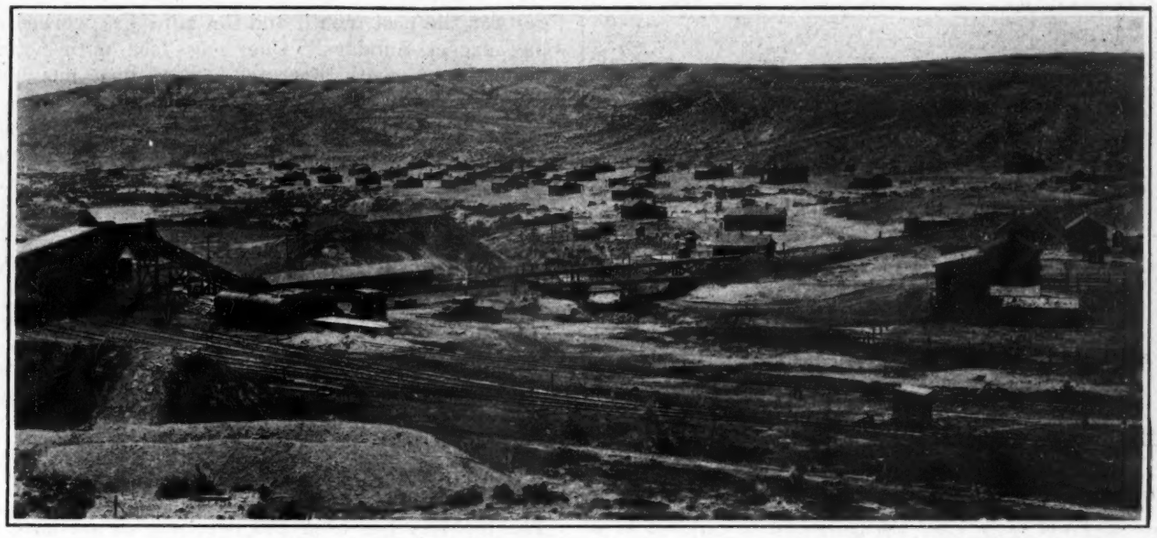
OPPOSITION TO MACHINERY is not unnatural. The miner who sees a machine which enables one man to do two men's work naturally anticipates that one man is likely to be dropped and is opposed to the improvement. Clever managers arrange that this shall not happen.

At most mines men are drifting away all the time. As a rule these drifters are not the most desirable men, and if no attempt is made to hire new employees the force gradually decreases automatically. Men, in fact, soon cease to apply for work. The word goes around that none are being hired, and they look elsewhere, perhaps in some other promising industry.

Now, with the force already decreased, so that machine operation is necessary to fill orders, the machines can be introduced without opposition. No one sees them as a threat but as a promise of steadier work, because of the low-cost production they assure. The machines are started without an excess of men being employed on them, and they work at maximum efficiency. The psychological conditions consequently are right. Because of the way it is introduced there is no antipathy to the machine and as it insures steadier work and lightens toil everyone is pleased.

Every operator should put himself in the miner's place. What would he do if he handled pick and shovel? He then will use excellent judgment in making innovations and see that they help instead of harm the employee.

In fact, would it not be well at times of low production to decrease the number of miners? It is true a large force of men insures a speedy loading of cars and less delays in transportation, but on the other hand it increases the area that must be kept under development and it destroys morale. After all, that latter factor is not to be undervalued. One may as well run a machine without lubricant as to handle humanity without morale.



Face Conveyors Work Better in Longwall Mining Than with Half-V Plan at Sweetwater

CONVEYOR HAULAGE of coal from face to entry is getting an interesting trial in the Sweetwater mine of the Gunn-Quealy Coal Co., in Wyoming. For a year conveyors have been used under several experimental systems, getting 100-per cent extraction. A modification of the V system was tried first, and lately, a plan of longwell mining. Roof troubles, handicapped the first scheme because the half-V's could not be worked fast enough. The longwall method, however, cleared up roof difficulty because of greater concentration of mining and swifter progress. About 10 per cent of each fall is shot directly onto the conveyors, thus lessening hand work. The company is still perfecting its system. Glenn A. Knox, superintendent of the company's operations, at the last meeting of the Rocky Mountain Coal Mining Institute described his experiments thus:

"The coal in this mine has an average thickness of 6 ft., 3 in., and lies on an average pitch of 5 deg. The roof is a sandy shale of medium hardness and has been generally considered as good top for the room and pillar method of mining.

"When our company became interested in conveyors, I visited most of the mines in the East where conveyors and other methods of mechanical mining are in use, and decided that a modification of the V-system in use at the Norton, W. Va., mine would be the most feasible for our conditions. We installed 300 ft. of conveyor as an experiment to see whether our roof could be handled on long faces. This 300 ft. was installed as two separate conveyors, one as a face conveyor 100 ft. long, the other as a heading conveyor delivering coal into mine cars on the main entry.

"This face, shown at *A* in the accompanying drawing, was worked directly on the strike and down the pitch. This did not prove to be a success as the caving of the roof carried over to the working face and necessitated propping between the conveyor and the face. It was also necessary to shovel coal onto the conveyor up the pitch. After working this face for 200 ft. we installed two conveyors at a place adjoining the worked-out block, but on a half V-shaped face as shown at *B* on the drawing. This block of coal was 60 ft. wide. This method proved to be successful. We cut a place, moved the conveyor against the face before shooting and carried two rows of cribs between the conveyor and the cave. The roof was caved every second cut.

"After working out this block we were satisfied that this system was feasible for our mine. We then ordered 1,200 ft. more conveyor of the same type as the trial section with a few modifications. We then installed this 1,500-ft. unit on the four faces, *C*, *D*, *E* and *F* on the sketch, with approximately 100 ft. to each face, 200 ft. on each heading and 300 ft. on the main conveyor lines that delivered the coal into the pit cars at the points *G* and *H*. We also had a head section and a rear section for each of the four advancing places shown.

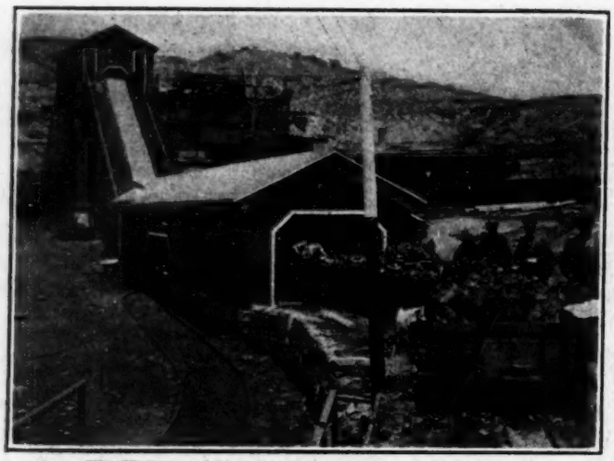
"As sections were taken out of the heading conveyors they were installed on the face conveyors, and, when the faces approached it, the main conveyor was taken out and installed in the next uphill or main-conveyor place. The roof caved very well in the straight line of the points and was broken about every 20 ft. We encountered no trouble unless we permitted one of the points to get behind.

"The maximum possible production by this method was estimated at 725 tons a day, assuming that all places were cut and cleaned up in one shift, and this we attained for several consecutive days.

"While this was a success from a cost standpoint, we felt that we could get a greater tonnage from the same length of conveyor if we changed over to a longwall method, using one face 250 ft. long with not more than

---

The headpiece shows Sweetwater village, south of Rock Springs, Wyo., where conveyor history is being made. The coal comes to the tipple by a long endless rope, where it is lifted by an apron conveyor to the requisite loading height. For use at this mine the superintendent, Glenn Knox, invented the box-car loader which goes by his name. It was described in *Coal Age*, July 2, 1925, page 17. This loader is an ordinary picking and loading boom lying between the railroad tracks which can deliver to open cars, if necessary, or to another boom resting between the tracks and so designed that it can in turn deliver the coal through the open door of a box car into the hopper of a box-car loader which duly delivers the coal on the car floor.



Tipple and Screen House at Sweetwater

Coal is dumped over an end dump onto a bucket conveyor. Many of the cars now have end and side plates, so that the tonnage they will carry when machine-loaded is increased 33 per cent or from 3,000 to 4,000 lb.

500 ft. of conveyor in use. We have been working on this plan for the past four months.

"We started this method at the point *J*, and tried to keep the cave from 20 to 25 ft. from the face. This did not prove to be a success and after we had gone only about 50 ft. the roof rode over the cribs to the face, forcing us to abandon it. We then installed two face conveyors of 250 ft. each in the place marked *K*, one face working out to *L* where some coal had to be abandoned and the other moving in the opposite direction to *M*. We adopted the plan of caving the roof every second cut and have been working on that plan ever since with good success with the roof.

"We set a row of breakers with props 8 in. or larger in diameter, about 18 in. apart in a straight line the entire length of the face. Cribs made of rejected railroad ties were placed about 15 ft. apart the entire length of the face. This gives us a crib 2 ft. 8 in. square. These cribs are set on about 6 in. of bugdust. It is seldom that they take any weight. They are used only when some unusual condition causes the roof to ride over the props to the face. In such cases they are employed only to protect the machinery and men. We have produced an average of 359 tons every working day for the past month and the mine has worked every day except Sundays. One long face with necessary development work operated every day has yielded enough coal to take care of our business.

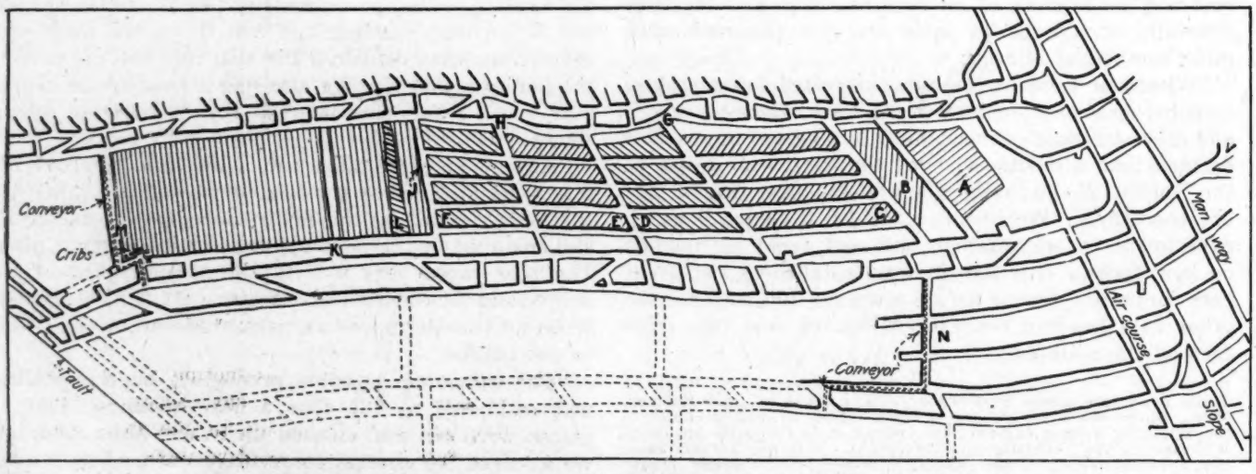
"It is my opinion that this method of mining should be kept going every day if possible. If it is permitted to stand still for a few days the roof will gradually settle and break along the face. This is true also of the half-V method. We did not get along well by working it only two or three days a week. The longwall system is a more flexible proposition, for either one or more faces, as the market may dictate, can be worked continuously.

"We have 1,000 ft. of conveyor temporarily out of use while it is being installed in two other places, one of which is shown on the sketch at *N*.

"We first began producing coal from the trial conveyor on Sept. 6, 1924. Since that time we have produced a total of 64,804 tons without hurting a man. The recovery has been 100 per cent, as we have aver-

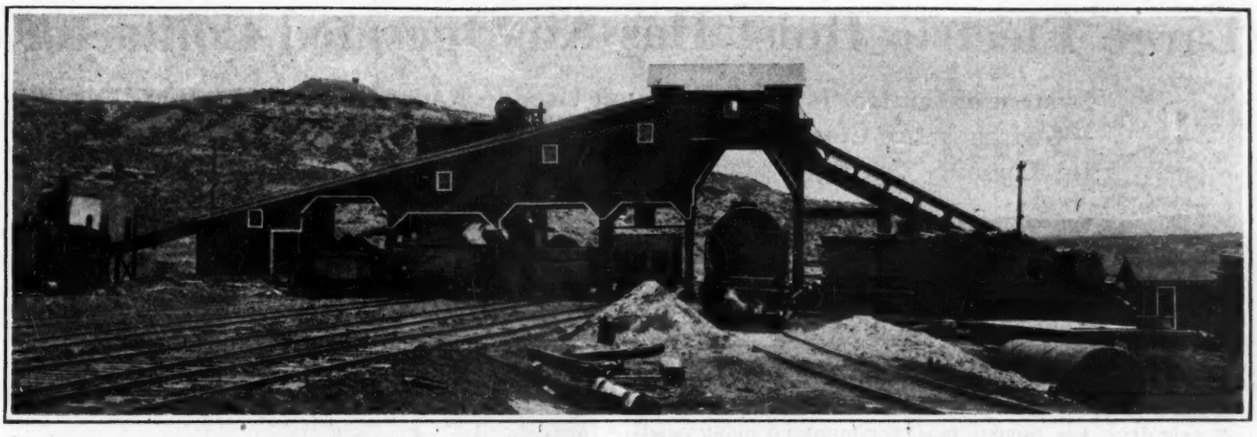
Apron Conveyor Brings Coal to Required Elevation

Returning run can be seen beneath the conveying run. All sizes are carried up together ready for sizing on the tipple.



Mine Workings Where Sectional Conveyors Are Being Tried

Trials were first conducted on a small scale to test roof action. After working two places shown at *A* and *B* it was believed that the roof could be controlled successfully. Accordingly, more conveyor was procured and mining with it started on a far more ambitious scale, four faces, *C*, *D*, *E* and *F* being worked. These were worked out, all but some small stumps, and a longwall face was tried at *J*. At present a longwall face is being worked at *M* and another similar face made ready at *N*.



The Tipple Has Four Load Tracks at the Sweetwater Mine

The principal commercial sizes in the Rock Springs area are 8-in. lump, 8-in. mine run (all below 8 in.); 5-in. or 3-in. lump coal; 5 x 3-in. stove coal, 5 x 1¼-in. and a 3 x 1¼-in. nut coal; 1¼-in. slack and 1¼ x ¾-in. pea coal or prepared slack and ¾ x 0 dust. The dust goes to smelters.

aged between 1,600 and 1,700 tons per foot per acre. The expense of maintaining these conveyors has been practically nothing.

"Each face, heading and advancing conveyor is run at a speed of 30 ft. per minute and driven with a 15-hp., high-starting-torque type motor, the speed of which is 900 r.p.m. The speed is cut down by a right-angle speed reducer. The main conveyor, when used on the half-V method, was driven at a speed of 90 ft. per minute and with a 50-hp. motor of the same type. The conveyors are made up of 6-ft. sections and all sections in heading, face and main conveyors are of one type and are interchangeable.

"In shooting a long face, we begin at the upper end. The holes are placed 10 ft. apart and we then start the conveyor and fire the shots one minute apart, keeping the conveyor running continuously. We find this practice to be highly satisfactory. When working it on the half-V system, we shot the coal down onto the conveyor the full length of the 100-ft. face while the conveyor was standing still. We had no trouble in starting the conveyor with this load. Under our present long-wall plan approximately 10 per cent of the cut is loaded out without being handled with shovels. The conveyor is placed directly against the face before shooting.

"The conveyor now in use is constructed along rather heavy lines and will withstand a reasonable fall. We never have damaged a section by shooting the coal onto it. We are working this system under 500 ft. of cover. The surface has shown no displacement or sign of settling.

"I do not believe the percentage of the different grades of coal produced by our various methods varied much, as the advantage in shooting or working the long faces is overcome by the breakage in handling it with the conveyors."

Freak Results from a High-Tension Ground in Illinois

The accompanying illustration shows the result of one phase of a high-tension line coming in contact with the ground. During a thunder storm in August, 1923, one wire of the 33,000-volt power line extending between mines Nos. 11 and 16 of the Old Ben Coal Corporation, located at Christopher and Sesser, Ill., respectively broke at an insulator allowing both ends to fall to the ground. The current seemed to pass from the end of one wire through the earth to the end of the other and thence on through the line.

At several points each of the fallen wires rested on small tree stumps that thus formed a connection between them and the ground. These stumps proceeded to burn out and the peculiar formation here shown was the result of the sand and soil fusing at its contact with the stump roots. As far as this fused formation extended into the earth the roots were completely burned away. Below this point the wood was badly charred while still farther down it appeared to be little harmed, retaining its woody characteristics.

The material of which this formation is composed is an impure glass or slag somewhat resembling the fulgurites sometimes formed where lightning strikes in sand. The soil, doubtless, acted as a flux for the sand it contained thus assisting the fusing process.

Incidentally, after the storm was over and the line was being repaired, an opossum was found dead between the points where the wires touched the ground. To all appearances, being inexperienced in the manipulation of high-tension transmission lines, he came out to investigate what all the fuss was about. And, like the inquisitive dog who once smelled of a third rail, he "got a nose full of information."

"Juices" Wild Did This

When a high-tension power line broke, each end fell on a little tree stump. The current apparently passed through the ground from stump to stump for a period until power was shut off. Each stump with most of its roots was burned out and sand in the soil was melted into strange shapes such as this, the dirt acting as a flux.

Large Electric Hoist Has Air-Operated Contactors

System of Control Is Similar to that Used in Railroad Electrification —Switches Are Closed by Compressed Air Acting Against a Powerful Opening Spring — Has Complete Set of Protective Devices

By J. E. Borland
General Engineer, Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa.

FOR MANY YEARS electric drive has been generally recognized as the most satisfactory and economical method of operation for mine hoists, and there are now hundreds of electrically driven hoists of all capacities in service. For new installations the electric drive has become most common and many existing steam hoists have been advantageously remodeled to use electric power. It is only under exceptional conditions that any advantage can be found for other possible forms of drive.

This general use of electric hoists has been brought about largely through the extension of power service, and the resulting widespread use of electric power in the mining industry. Improvements in methods of control, also, have contributed greatly toward the prevalence of electric operation of hoists.

The three general systems of electric hoisting are: (1) the wound-rotor induction motor with rheostatic control. (2) The direct-current motor with variable voltage control and supplied by a synchronous motor-generator set. (3) The direct-current motor with variable voltage control and supplied by an induction motor-generator set provided with a flywheel for load equalization.

The induction motor with rheostatic control is the simplest type of equipment for an electric mine hoist, and under ordinary conditions the most economical in operation. Magnetic control equipment has proved successful in the capacities for which it has been developed. For large motors, however, variable voltage control, with the added expense of a motor-generator set, often has been considered necessary because of the magnitude of the main currents, even though other conditions favored the use of an induction motor. Such conditions will generally be found with large capacity hoisting cycles with a heavy load per trip from a deep level. In such cases the accelerating and retarding periods are a comparatively small part of the total hoisting cycle. On hoists of this chracter, motor ratings of from 1,000 hp. to 2,000 hp. often are required, and contactors of high capacity are necessary if the main motor currents are to be controlled directly.

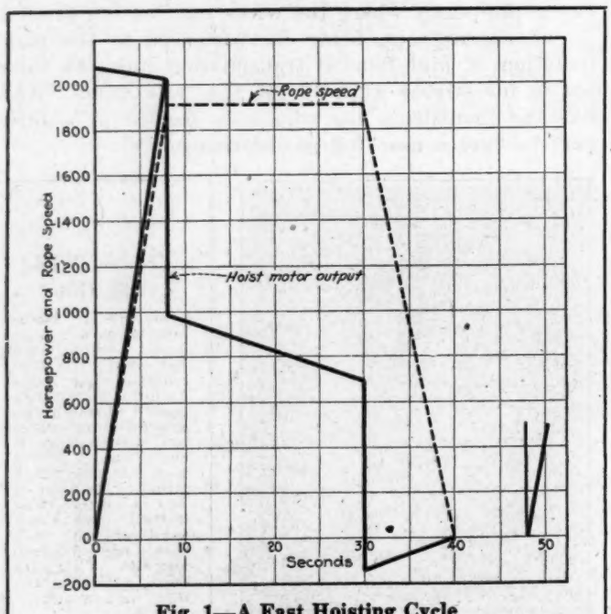


Fig. 1—A Fast Hoisting Cycle

Although the hoist is operated in balance the horsepower required is large. The depth of the shaft is 989 ft. and the maximum drum speed 60.5 r.p.m.

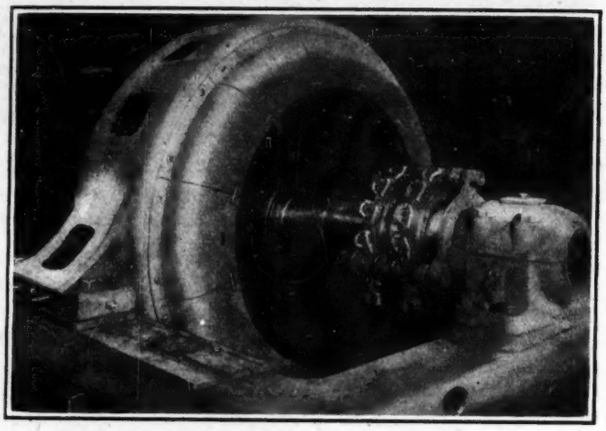


Fig. 2—Pedestal Type Hoist Motor

The shaft of the rotor is made long so that inspection of the rotor or stator winding can be made readily by moving the stator in an endwise direction.

A novel and interesting application of control for a large mine hoist is the equipment recently installed at Shaft No. 4 of the Lehigh Coal and Navigation Co. The duty cycle upon which the capacity of the electrical equipment was based is shown by Fig. 1.

For this service a wound-rotor induction motor having a continuous 40-deg. C. rating of 1,200 hp., 300/293 r.p.m. was selected to operate from a 2,200-volt, three-phase, 25-cycle power supply. The motor is of the pedestal bearing type, similar to that shown in Fig. 2, and was supplied with two pedestal bearings but without base; being mounted on an extension of the hoist bedplate. The frame of this motor is a single casting and provision is made for shifting it in a direction parallel to the shaft a sufficient distance to uncover the rotor winding and facilitate inspection or repair. The motor is provided with a shaft extension which is connected through a flexible coupling to the pinion shaft of the hoist.

This installation is of interest mainly in the application of the electro-pneumatic system of control for the 1,200-hp. induction motor. Electro-pneumatic control has been used for many years on heavy traction, street railway and subway service, and has gained high reputation through its strong construction, positive opera-

tion and low maintenance. This type of equipment is well adapted to control of large induction motors on heavy-duty service.

The main circuit switches of the hoist controller are electro-pneumatically operated, each switch being closed individually by air pressure acting on a piston opposed by a powerful spring. Compressed air is admitted to and exhausted from the switch cylinders through electrically operated valves which are governed by the master controller in conjunction with automatic current limiting and protective relays. Strong forces are exerted which insure positive and rapid action of the switch, with a quick break on opening and heavy contact pressure in the closed position. The movement of the

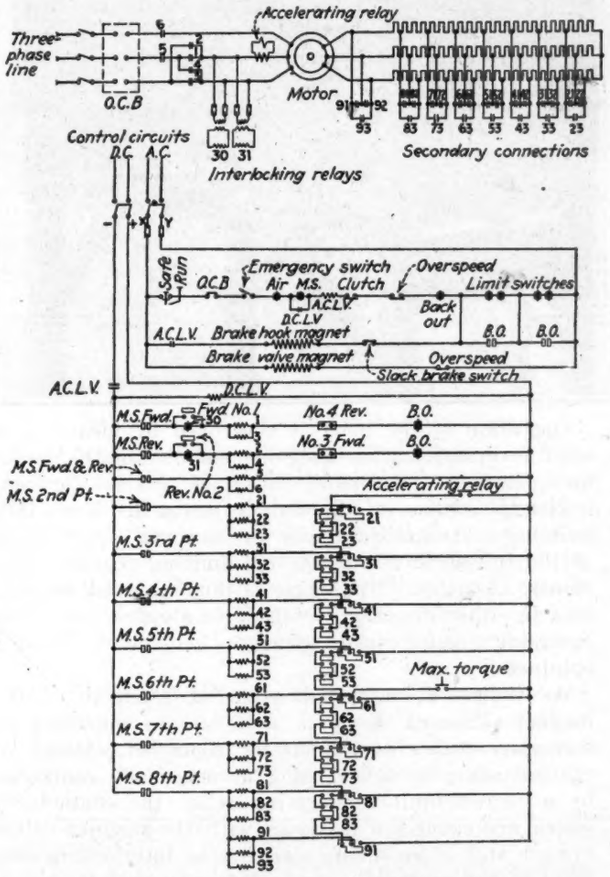


Fig. 3—Control Wiring Is Simplified

Many features designed to make possible safe and quick control of the hoist have been incorporated here. Accelerating relays, limit switches, overspeed relays and other necessary devices which have made electric hoists so efficient and safe have also been included in the control system.

switch contacts is such that arcing occurs mainly on the tips of the contacts and on the arcing horns, thus leaving the current-carrying surfaces relatively smooth and clean.

The main control circuit providing excitation for the magnet valves of the main switches is taken from a separate source of direct-current energy at low voltage. The magnet valves are small and the power consumed is negligible. Operation of the electro-pneumatic switches is entirely independent of any variation of voltage on the main alternating-current line, and reliable operation is obtained over a wide range in air pressure.

Each electro-pneumatic switch is a unit in itself, and may be removed independently from the supporting

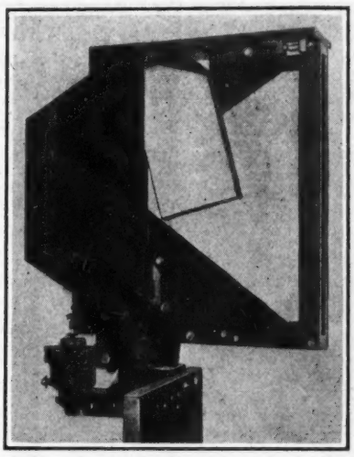


FIG. 4

Electro-Pneumatic Switch

Normally the switch is held open by means of a spring and is closed by compressed air pressure. The primary switch is provided with arc chutes and blowout coils.

structure without disturbing adjacent units. All parts subject to wear are located so as to be readily accessible for inspection or replacement.

For reversing the direction of rotation of the hoist motor six primary unit switches are used. The detailed construction of these switches is shown in Fig. 4. Each primary switch has a rating of 500 amp. and is insulated for 3,000-volt service. A correctly proportioned blowout coil, pole pieces and arcing horns on each switch insure positive rupturing of the arc. Each switch is equipped with an arcing chute of heat-resisting material in which the arcs are extinguished.

The primary reversing switches are mounted in a substantial structural steel framework as shown by Fig. 6. The six switches are arranged in three two-pole elements, the two units of each element being mechanically connected together so as to operate simultaneously. One two-pole element is closed at every opera-

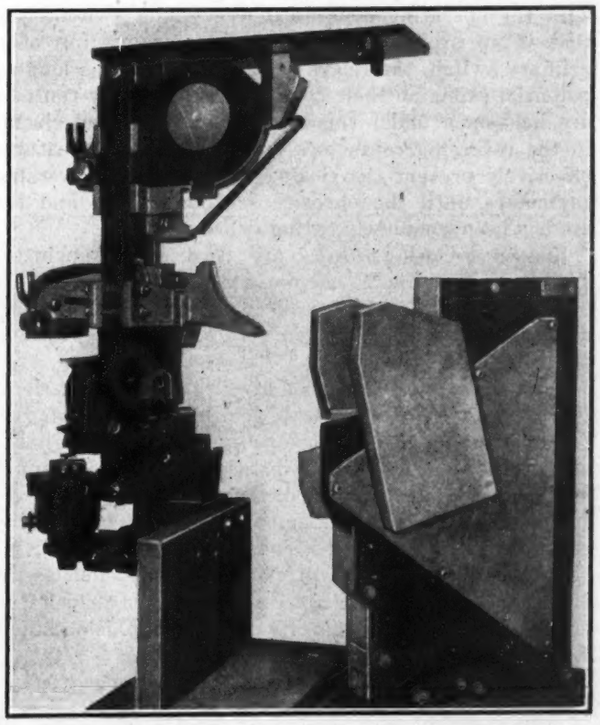
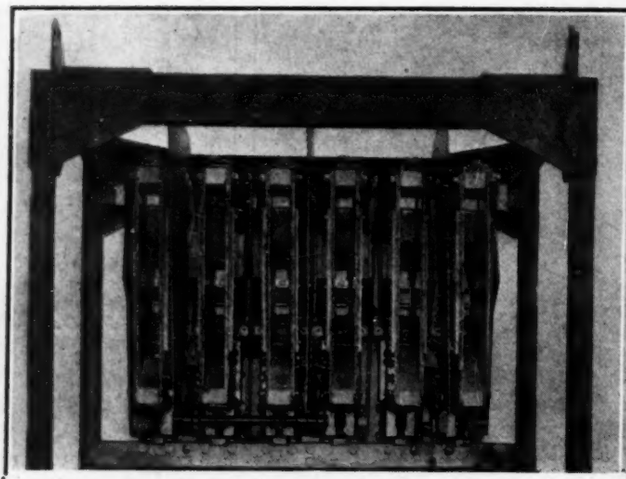
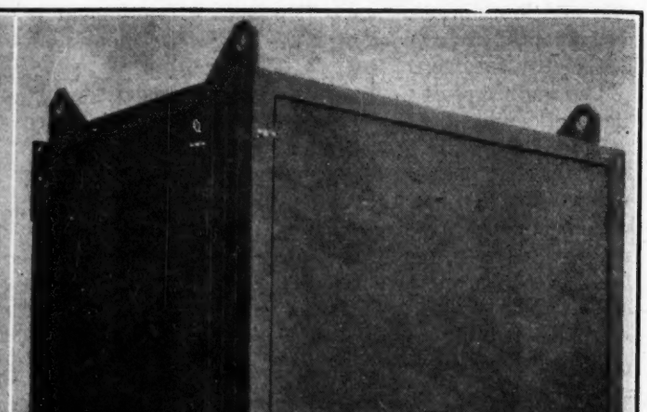


Fig. 5—Arc Chute Removed from Primary Switch

Long troughs made of insulating material hold the arc from damaging adjacent parts or other switches and yet cause the arc to break quickly.





Figs. 6 and 7—Primary Reversing Switches

These illustrations clearly show how the high voltage switches are grouped and protected. An air pipe extending underneath the switches connects to the air cylinder which closes the power circuits.

tion while the other two elements are used to reverse one phase of the primary, and are closed alternately, for the two directions of rotation.

A strong mechanical interlock is provided between the two two-pole switch elements used for reversing, and in addition a system of electrical interlocking is used as shown by the controller diagram. This consists essentially of two small transformers having their high-voltage windings connected across one phase of the primary circuits, between the reversing switches and the motor, and the low-voltage windings connected to the operating coils of two normally closed relays designated as Nos. 30 and 31 in the diagram. The normally closed relay contacts are connected in series with the operating coils of the reversing switches, so that if an arc tends to hang on after opening of a primary switch, the relays remain energized as long as potential exists on their coils, and as the relay contacts are held open under this condition the control circuit to the reversing contactors is broken. These features effectively prevent the closing of one set of reversing contactors until the opposite set has opened and the arc has been completely extinguished.

Special inclosing covers are used on the primary switch group to muffle the noise which is characteristic of all high-voltage air-break contactors. The appearance of the primary switch structure with covers in place is shown by Fig. 7.

Twenty-four unit switches are provided for acceleration of the motor by short circuiting sections of grid resistor connected in the rotor circuits. These switches are of the same general construction as the primary switches, but are insulated for 1,500 volts and are furnished with arc chutes only, blowout coils being unnecessary, as the switches do not open the circuit. Each secondary switch has a rating of 800 amp., and as the switches, in groups of three, are connected in delta on each step, an effective capacity of 1,200 amp. is obtained. Eight steps of resistance are used.

The secondary switches are assembled in three structural steel frames as illustrated by Fig. 8. Inclosing covers are not required with these switches as the only noise attending their operation is the escape of air from the cylinders upon opening.

Operation of the hoist is controlled by means of a small reversing master controller mounted on the operator's platform. By manipulation of this master controller the closing of the main primary and secondary switches is controlled under the automatic protection of the interlocking and current-limiting features previously described. The motor is thus reversed, accelerated in either direction, retarded or stopped, and when operating under load accurate control is readily obtained.

As indicated on the diagram of connections, the magnet valves of the main switches are energized by successive points of the master controller, closing of the secondary switches being automatically controlled by a current-limit accelerating relay, the contacts of which are connected in series with the magnet valves of each step of secondary switches by interlocking contacts on the preceding step. This relay is adjusted to hold its contacts open until the current has decreased to a predetermined value, so that if the master controller handle is moved too rapidly the hoist is automatically accelerated at the proper rate, the relay delaying the closing of successive secondary switches until the current has decreased to the desired value.

To permit starting the hoist under exceptionally heavy loads without changing the setting of the accelerating relay, a foot-operated switch is located on the operator's platform. Closing of the switch short circuits the relay contacts so as to permit closing of the proper secondary switches to obtain the maximum motor torque at starting.

The 2,200-volt incoming line to the hoist equipment is brought through disconnecting switches to a switchboard panel of standard construction consisting of three slate bases with black marine finish supported on 92-in. pipe framework with a channel-iron sill. The panel is provided with a coverplate and operating handle for a

manually operated remote controlled oil circuit breaker, which is mounted on the wall at the rear. The oil circuit breaker is rated 500 amp., 7,500 volts, three-pole, single throw.

Overload protection of the hoist equipment is provided by two transformer trip coils on the oil circuit breaker coverplate, and inverse time limit attachments are used to prevent the circuit breaker from opening on high overloads of short duration required to accelerate exceptionally heavy loads. The circuit breaker is arranged to open also in case of low voltage. The switchboard is provided with a polyphase watthour meter showing the power consumption of the hoist.

A simple scheme of control connections is used and the usual safety features are readily included. For protection of the hoist equipment in case of power failure, a double-pole alternating-current low-voltage relay is provided, one pole being wired in series with the direct-current control circuit and the other pole in series with the brake hook magnet so that opening of the relay causes all main control switches to be de-energized and the brake set. A reset contact on the master controller is so connected to this and the direct-current low-voltage relay that the master controller must be returned to the "off" position before operation can be resumed, following a failure of power. This prevents an accidental start of the hoist upon return of power as the master controller must be in the "off" position to reclose the low-voltage relays.

Safety Device Prevents Overspeed

Protection against overspeed or overtravel at the hoisting limits is furnished by a safety device driven from the hoist drum. Contacts of this device are connected in the alternating-current low-voltage relay circuit so that opening of any safety contact will stop the hoist. A small drum "back-out" switch is used to permit operation of the hoist in the reverse direction only, in case of overtravel and opening of any of the limit switch contacts.

A protective relay is used to prevent operation of the hoist controller if the air pressure should fall below the lowest point in the desirable range of pressure for the electro-pneumatic switches. This prevents closing of the main switches unless strong air pressure is present, and obviates the possibility of faulty operation under insufficient closing forces.

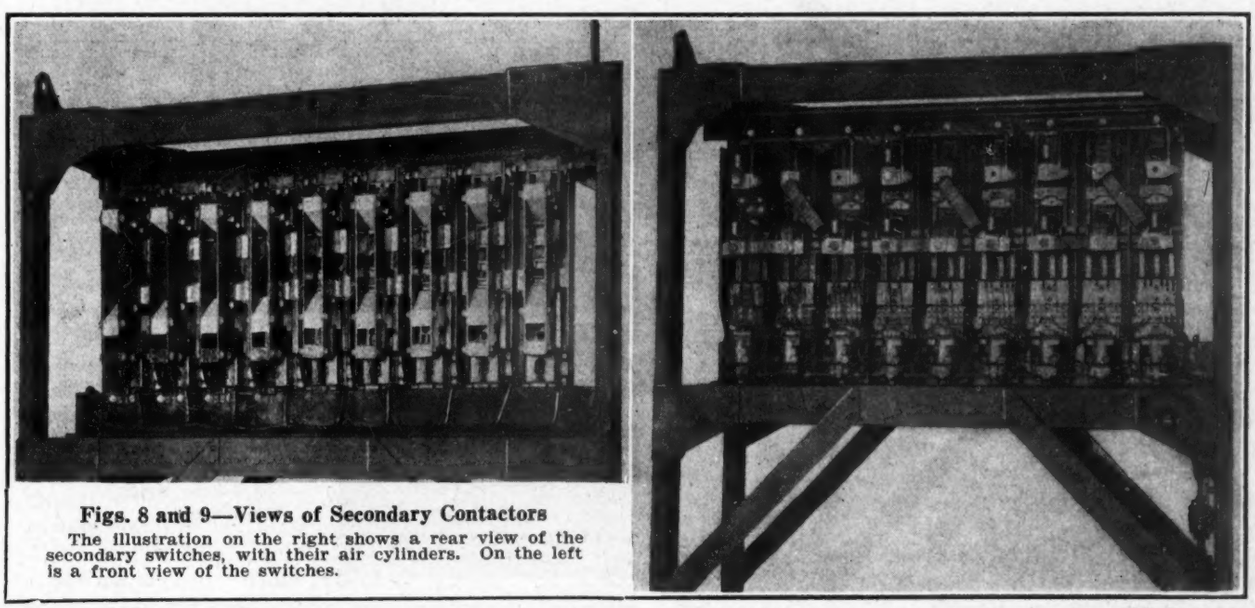
A means of stopping the hoist quickly in an emergency is provided in a safety push button mounted on a panel on the operator's platform. This panel also carries starting buttons for the exciter set and air compressor motor, pressure gages and meters indicating operation of the hoist equipment.

The controller includes grid resistors designed for low torque on the first point with properly proportioned accelerating steps. Resistors of sufficient capacity are used to avoid undue heating during acceleration or speed control of the motor.

Advantages of Automatic Control

From the foregoing description it may be seen that electro-pneumatic control embodies a number of features desirable in heavy duty service. Reliability in operation and low maintenance costs are insured by the use of main control switches, interlocks and auxiliary parts of substantial construction, following designs that have been proven under severe operating conditions. Operation of the electro-pneumatic switches is rapid and positive and is unaffected by ordinary variations in line voltage. The unit switches are assembled in compact groups supported on steel framework. This form of construction leaves all parts readily accessible, and at the same time simplifies installation of the control equipment. Operation of the electro-pneumatic switches is quiet, as there are no weighty moving parts. The noise which accompanies the breaking of arcs of the primary switches is characteristic of all high-voltage contactors and special covers are provided on the reversing switch group to muffle this noise. With this provision both the primary and the secondary switch groups may be located in the hoist room which avoids the necessity of constructing a separate control room and may result in a material saving in building construction.

The selection of this type of control by the engineers of the Lehigh Coal & Navigation Co. undoubtedly marks a step forward in the practice of controlling large induction motor mine hoists.



Figs. 8 and 9—Views of Secondary Contactors

The illustration on the right shows a rear view of the secondary switches, with their air cylinders. On the left is a front view of the switches.

Triple Shifting Makes Big Stripper Profitable

By Frank H. Kneeland
Associate Editor, *Coal Age*
New York City

ABOUT FOUR MILES, as the crow flies, northeast from the Court House in Boonville, Ind., lies a body of coal land half a mile square which attracts attention because stripping takes place there on a three-shift basis that has resulted in marked economy of operation. It is the Sunlight Coal Co.'s plant. This is one of the few coal operations in southern Indiana or in the Middle West, for that matter, that worked regularly six days per week most of the summer. The big electric shovel removing the overburden runs day and night. The small loading shovel, however, can load out as much coal in one shift as the stripper can uncover in three.

Two factors are mainly responsible for the operating economy which has enabled this strip mine to keep working in a time when most neighboring plants ran part-time or not at all. First, triple shifting keeps the stripper busy throughout the entire day, thus cutting to one-third the hourly overhead charge entailed by the cost of this machine. Second, the use of electric power greatly reduces the cost of labor necessary for this shovel's operation.

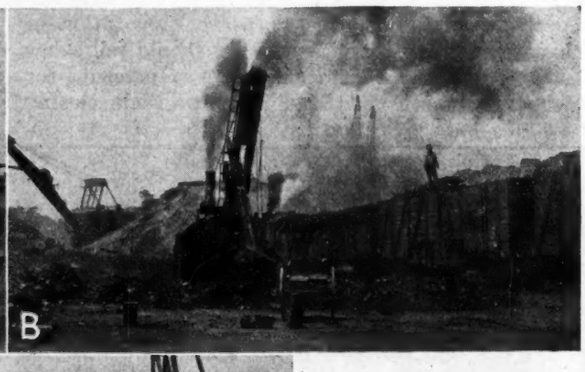
The overburden stripped in this operation consists of sandstone, shale, slate and surface soil. It ranges in thickness from approximately 25 to 50 ft. The coal uncovered is from 6 to 7½ ft. thick, is free from partings and lies approximately level, that is, without any general dip.

To facilitate the operation of the stripper, the overburden is drilled with two gasoline and one electric churn drills. Six-inch holes are put down to within about 1 ft. of the coal. Each of these is cleaned out and slightly sprung with one stick of 4x8-in. 40-per cent dynamite. They are then loaded with about equal weights of this dynamite and *FF* black blasting powder, from 25 to 50 lb. of each explosive being used in each hole according to the depth of overburden encountered. Firing is done with electric detonators.

The coal is drilled by means of compressed air and shot with the same grade of dynamite as the overburden. In this case, however, the sticks of explosive are 1x8-in. while the holes into which they are loaded are 2 in. in diameter. Air cushioning to some extent is thus obtained and the shattering effect of the explosive on the coal is lessened accordingly. After shooting, the coal is loaded direct into railroad cars by a steam shovel fitted with a dipper of 1¼ cu.yd. capacity. The railroad cars are run directly into the pit.

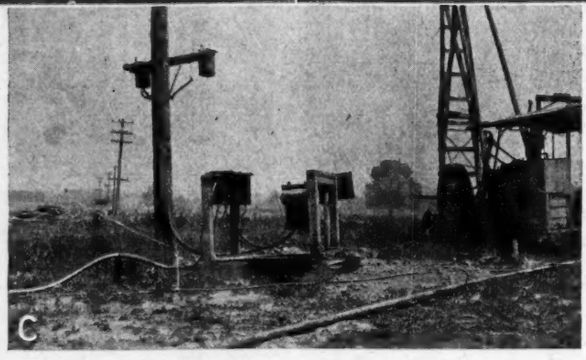
The stripping shovel works back and forth along the face taking a width of about 40 ft. of overburden at each cut. The total length of the pit is now about 2,500 ft., this face extending roughly diagonally across the tract from corner to corner—that is, from northeast to southwest.

The stripper is operated by two men: a shovelman and an oiler. The full crew, however, consists of six men and an electrician who works on it only part time. One man gives his entire attention to keeping a record or log of the stripping shovel's operation. He thus records the linear feet of the shovel's advance per



Uncovering Coal

Illustration A shows the big electric stripper of the Sunlight Coal Co. It runs three shifts a day exposing coal for the 1¼-yd. steam loading shovel, B.



Power by Wire

At the left is the end of the 4,000-volt pole line. The sled carrying fuses and an oil switch advances with the workings. The shot-hole drill is shown also.

Dumping to the Spoil Bank

This is a general view of the strip pit showing, in addition to the stripper, the cut made by the loading machine. The track on the coal berm is of standard gage as railroad cars are run in to the pit and filled by the loading shovel.

shift, the number of moves it makes during the shift and the number of dips it takes. He also records the time lost and the reason for any delays. His log is extremely valuable, not only as a record of what actually has been accomplished, but also as a guide as to what may be expected in any depth of overburden encountered.

In order to stimulate the interest of the men in their work, the log man each day chalks up on the side of the underframe of the machine the record of the previous day's accomplishment. Thus on July 17, the record shown in the accompanying table was chalked up, referring to the work of July 16. This shows that the first shift made six moves and advanced the machine 52 ft. The second shift made nine moves and advanced 106½ ft., while the third shift made ten moves with a machine advance of 111 ft. The total for the day was twenty-five moves and 269½ ft. of advance.

Table I—Machine Log for July 16

Shift No.	Moves Made	Distance Advanced, Ft.
1	6	52
2	9	106½
3	10	111
Total	25	269½

Not the least interesting detail of this stripping is the method of surveying employed. The surface is laid out in rectangles 50 ft., each way. Thus every 50 ft., both north and south, and east and west, a stake is driven in the ground upon which is painted the coordinates of this particular station and the elevation of the surface at that point. In the office in Boonville a corresponding plat of the area is kept.

At each advance of the machine, the brow of the cut is measured from at least two of these stakes, a measurement from a third usually being taken as a check upon the other two. The exact position of the machine and its movements for each shift may thus be plotted on the plat in the office. These measurements are taken whenever the machine moves up. Once a month a check survey is made and the approximate results obtained by this method are then corrected.

Interest in this operation largely centers in the big stripping shovel. While this is of a type that is not perhaps strictly new, as several machines of a similar character are already employed in various parts of the country, it is, nevertheless, of a design that will unquestionably be employed far more extensively in the future than it has been in the past.

This stripper is a Marion "350" full revolving electric machine, mounted on four, four-wheel trucks. Ward-Leonard full voltage control is employed on all of the electrical equipment.

Some of the chief dimensions of this machine are as follows: Length of boom, 90 ft.; capacity of dipper, 8 cu.yd.; length of dipper handle, 56 ft.; maximum height of dump with boom at 45 deg., 67 ft. above the rail; maximum radius of dump at maximum height, 97 ft.; maximum radius of dump, dipper handle horizontal, 101 ft.; height of dump, handle level, 47½ ft.; radius of cut at grade (1 ft. below top of rail) 69 ft.; radius of cut at 40 ft. elevation, 106 ft.; extreme height of boom above top of rail, 80 ft.; extreme radius of boom from center of shovel, 97 ft.; approximate working weight, with ballast, 890,000 lb.; ballast for upper frame, 180,000 lb.

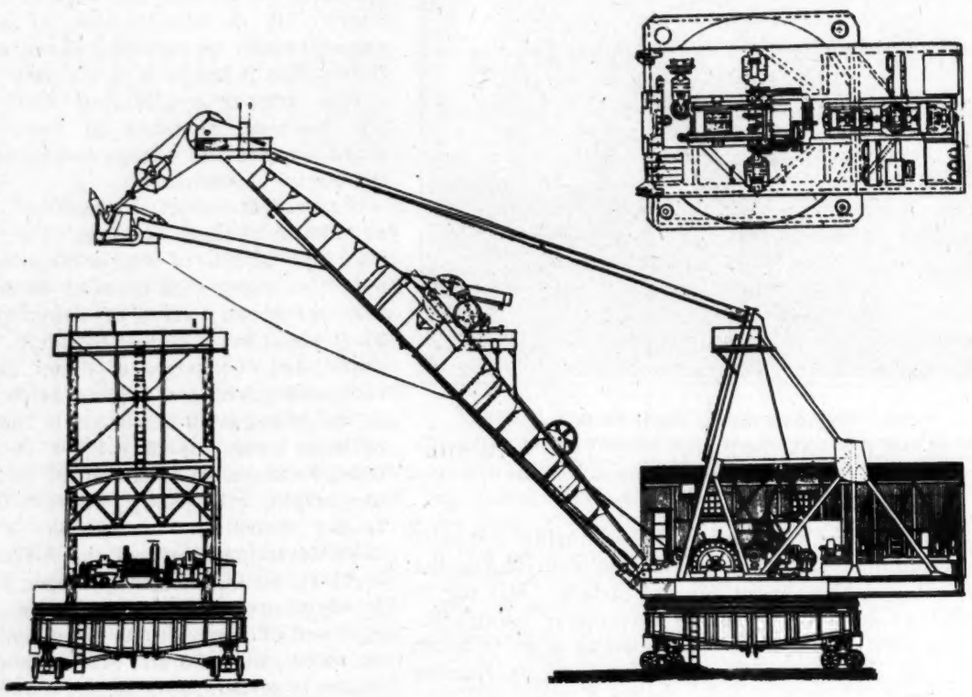
The extreme height of the A-frame from top of rail is 51 ft. 10 in.; length of upper frame, 46 ft. 10 in.; width of upper frame, 21 ft. 8 in.; clearance radius of rear end of upper frame from center, 33 ft.; diameter of roller circle, 30 ft.; size of lower frame, center to center of girders, 30 x 30 ft.; center to center of trucks, 26 ft.; center to center of truck wheels, 3 ft. 3 in.; diameter of truck wheels, 2 ft. 6 in.; capacity of hoisting motor (60 min. rating) 175 hp.; rotating motor, 105 hp.; crowding motor, 85 hp.; hoisting generator, 250 kw.; rotating generator, 75 kw.; crowding generator, 50 kw.; diameter of hoisting cable, 1⅛ in.; of boom hoist cable, 1 in.; number of rollers under revolving frame, 78.

PLATE GIRDERS FOR OUTER MEMBERS

The outer members of the lower frame are composed of plate girders, 56 in. deep at the center. These are braced at the corners with diagonal girders 37 in. deep. Each corner of the frame is also fitted with a heavy steel casting connected to the side, end and diagonal frame members which extends the full depth of the frame. This casting is also arranged to carry a cylinder of the hydraulic leveling device.

The lower frame is mounted on four swiveling trucks, each consisting of an open-hearth steel, frame casting, carrying four double-flanged wheels. All four wheels in a truck and all four trucks are drivers. Each truck is provided with an adjustable chain. This prevents the trucks from becoming totally disengaged from the pistons in the equalizing jacks on the lower frame. The truck castings are provided with bushed bearings for the propelling shaft and the inside wheels are fitted with spur gears engaging the driving pinions. Two sets of track, one at either side of the machine, are necessary.

A patented hydraulic equalizing device, consisting of four cylinders with trunk pistons, circulating pumps and the necessary piping and connections, are provided for the lower frame. These hydraulic cylinders are carried in the steel castings at the corners of the frame, each casting as well as its cylinder being so designed as to form a ball-and-socket joint. This joint permits the truck to traverse curved or uneven track. The cylinders are accurately bored to receive the pistons. Two sets of leather packing prevent leakage. The upper portions of the pistons are turned smooth,



THE BIG STRIPPER

This gives an idea of the general outline of the machine, but can afford small conception of its size. When the dipper handle is level and thrust forward as far as possible, it is approximately 130 ft. horizontally from the front of the digging teeth to the rear of the shovel cab.

while their lower ends are threaded to receive safety locking nuts. These may be easily adjusted by hand and are intended to be set up close to the cylinders while the machine is in operation, but to be moved away when it is being moved. In no case should they be set up tight against the cylinders as the machine operates on the fluid within them.

One power-operated and one hand-operated pump are conveniently located on the lower frame and connected to the cylinders with heavy pipes, valves and bypasses so that the fluid may be forced from one cylinder to another, or to the reservoir at the pumps. This equalizing or leveling device gives the flexibility of three-point suspension and permits the machine to be operated or moved over uneven track without subjecting the lower frame to torsional stresses arising from an unequal distribution of weight.

All the wheels of the four, four-wheel trucks are double flanged and all act as drivers. Propulsion is accomplished by means of a jaw clutch which may be thrown in or out of gear as may be desired. The turntable on which the upper frame revolves is of the roller type, consisting of two circles of 175-lb. rail, one fastened to the upper and the other to the lower frame. Between them revolve 78 double-flange rollers. These are of high carbon steel and are held between an inner and an outer strap each of which is rolled to a true circle. They are grease lubricated by means of hand compression cups.

This machine is equipped with a motor generator set, consisting of a three-phase, 60-cycle motor, suitable for connection to either a 2,300- or 4,000-volt line. This drives three 250-volt, direct-current generators; one actuates the hoist motor, one the swinging motor and one the crowding motor. Changes in the speeds of these various machines are secured by voltage control of their respective generators, a suitable rheostat being placed in each generator field. Provision is made for automatically limiting the current in each motor to such a value as will develop the maximum torque desired. Each motor is provided with its individual control panel, the master controllers being located at the operator's station at the front end of the revolving platform. The trip motor, or the one that discharges the bucket, is wound for 115 volts, direct current, energy for its operation being drawn from the exciter. This motor, like the others, is controlled from the operator's station by means of a small hand lever. This is mounted on the hoisting controller. All electrical equipment, such as motors, generators and the like, are grounded to the frame of the machine.

Three 7½-kva., single-phase transformers of 2,300 to 4,000 volts primary, and 110 to 120 volts secondary current, are installed for operating a direct-connected air compressor which in turn actuates the brakes on the hoisting apparatus. Three 1½-kva., single-phase transformers are installed on the lower frame for operating the hydraulic pump and to furnish current to the various lighting circuits.

Two open, mill type, 230-volt, direct-current, series-wound motors are located at the side of the hoist frame and compound geared to the hoisting drum through a friction brake. The intermediate or clutch shaft carries the gears for driving the hoisting drum, the boom hoist drum and propelling mechanism. Clutches provide for disengaging of the propulsion apparatus and the boom hoist drum when these are not in use.

The hoisting drum is grooved for 1⅜-in. rope and mounted loosely on its shaft. It is actuated by an outside air-operated friction band brake, the air cylinder being attached to the spokes of the gear wheel. The friction band is lined with wood blocks and provided with a long take up. The boom hoist drum, mounted at the rear of the hoist machinery frame, is driven by a clutch on the intermediate shaft through a worm and worm wheel, which locks the boom in any desired position without the use of ratchets or pawls.

The rotating or swinging motor is of the open mill type wound for 230 volts, direct current, and is compound geared to the vertical driving shaft.

The boom consists of two main members in the form of plate girders, trussed and braced together by means of bulkheads and top and bottom plates. The rounded boom foot casting is stepped into a foot casting of corresponding design, thus permitting a slight rolling motion of the boom without injury to any of the parts. Cable guys connected at the peak and center of the boom stay it during the start and stop of the swing. The crowding motor is of inclosed mill type, wound for 230-volt, direct current and compound geared to the shipper shaft. The dipper handle is of combination steel and wood type, composed of two wooden members with steel armor plates on both sides and steel bars on top and bottom. It is held to the shipper shaft pinion by means of a yoke or saddle block.

Both the dipper front and the bail are manganese steel castings. The sheave block attached to the bail carries a 60-in. open-hearth steel sheave provided with a finished groove.

All operating levers controlling the machine are located at the forward end of the revolving frame to the left of the boom and so arranged as to be within easy reach of the shovel runner who has a clear and unobstructed view of the work to be performed. The entire machine has been designed to assure ease in handling and speed of operation.

This shovel is operated on purchased current. An outdoor transformer station is located at one side of the property with feeder lines radiating from it toward the open cut. Several points are thus available at a comparatively short distance from the brow of the cut for attachment of the cable leading to the shovel. This cable is connected to the nearest available point and laid over the ground to the machine. Any surplus is wound on a reel at the forward end of the under frame. This cable is of the three-conductor, rubber covered, type and is, perhaps, 2 in. in diameter. Current enters the shovel through the center of rotation.

Blending of Soft and Hard Coal Feasible

Blending of anthracite and bituminous coals is a matter of dollars and cents, Dr. O. P. Hood, chief mechanical engineer of the Bureau of Mines, states. It long has been done in special cases, he points out.

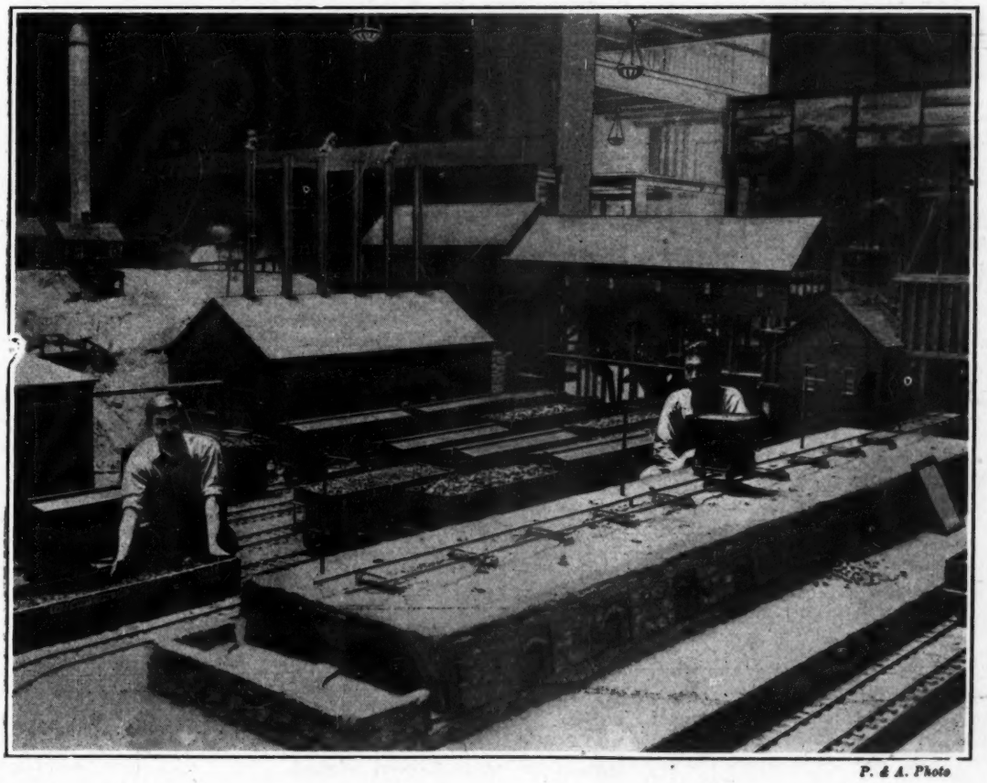
Tests which have come under Dr. Hood's personal observation indicate that no difficulty was experienced in burning 25 per cent of anthracite fines on an ordinary bituminous fuel bed. One shovel in four can be placed and it will make little difference in the control of the fuel bed. As the percentage of anthracite increases, Dr. Hood says, more and more skill is required. Tests indicated that a half-and-half mixture is the limit to which this practice can be extended reasonably. In these tests the blending was done at the furnace by firing from two available piles of coal.

The trouble in using a mixture, Dr. Hood explains, is that the ordinary grate bars adapted for bituminous coal cause holes to form in the fuel bed. A hole over the bare grate cannot be patched by anthracite fines.

Dr. Hood thinks the cost factor will control in the blending of coals rather than the advantages of smokelessness. Consumers of coal, as a rule, are not willing to pay much for that advantage. Much blending of anthracite now is done so as to equalize ash content, Dr. Hood says.

Deepest Coal Mine in America

No mine in the anthracite region is deeper probably than the Auchincloss No. 1 Shaft of the Glen Alden Coal Co., near Nanticoke, Luzerne County, Pennsylvania, it being 1,697.4 ft. to the Red Ash bed. Coal is being mined at a depth of 1,673 ft. below the surface or at an elevation of 953 below tide. The Auchincloss coal is prepared at the Loomis breaker. This is probably the deepest coal shaft not only in the anthracite region but in the United States.

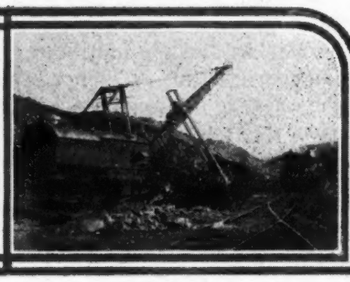


P. & A. Photo

Big Mine but No Output

However, it helps instruct the nation in what a coal mine top works and coke-making plant look like. It is a miniature modelled after a Consolidation Coal Co. plant near Fairmont, W. Va. and is now on exhibit in the National Museum in Washington. It is the largest model of a coal mine ever built. The gondolas in the foreground hold 40 lb. of coal each. This miniature, realistic even to the smoke issuing from power plant stacks, is usually surrounded by an interested group of the visitors in the museum which is a part of the Smithsonian Institution. The battery of coke ovens with their charging car extend into the foreground.

News Of the Industry



Lewis Seeks Executive Intervention To Forestall Hard-Coal Regulation By Congress, Washington Believes

By Paul Wooton
Washington Correspondent of *Coal Age*

What appear to be frantic efforts on the part of the United Mine Workers to bring about federal intervention lead some observers in Washington to think that everything will be done to force the administration to undertake to bring about a settlement before the convening of Congress. Apparently the mine workers sense the fact that regulation in some form is likely to result if Congress undertakes to compose the situation.

Organized labor is just as opposed to government regulation, many believe, as are the operators. William Green, when secretary of the Mine Workers, testified vigorously to that effect before the LaFollette subcommittee of the Senate Committee on Manufactures. Regulation probably would carry with it the fixing of wages by a federal board. This specter probably is responsible for the signs President Lewis is showing that he is apprehensive of Congress.

On the other hand, if he can bring about executive intervention, Congress may not interfere while Coolidge is running with the ball. At least this has been the case during previous strikes. Congress was in session during the strike of 1922, but took no action during the strike because the executive branch was taking active steps looking to a settlement. Congress also was in session during the strike of 1919, but deferred to the executive who had intervened.

Administration to Keep Out

The apparent purpose of various moves the Mine Workers are making is influencing the administration to be even more determined to stay out. The more Mr. Lewis insists that the administration was responsible for the Jacksonville agreement the less likely it will be to take action which could be interpreted only as an acceptance of that responsibility and as an effort to require compliance with a labor agreement.

Of course it is understood that Mr. Lewis has not played all of his cards and that it is going to require no small amount of political courage for the administration to keep out when the pressure he can bring gets stronger. Just what form the pressure will take has not been revealed. It hardly is supposed that another march on Mingo will be tried, despite the fact that the marches in 1920 and 1921 were entirely successful in so far as arousing Washington was concerned. It is realized that the stage is being set for something and it is not supposed Mr. Lewis will allow the strike to stay much longer on dead center. This is mid-October. In less than seven weeks the gavels will fall at each end of the Capitol.

Lewis Headed Toward Congress

Instead of involving the executive branch of the government it would seem that Mr. Lewis' tactics are calculated to push the controversy into Congress, where there will not be the same disposition to keep hands off, particularly if New England, New York and Pennsylvania, which will begin to experience inconvenience by midwinter, get nervous about coal supply. The delegations from the anthracite-consuming area have great influence in Congress. December probably will find them in a state of indignation because the people find themselves unable to replenish their anthracite supplies. These delegations are in a position to start consideration of legislative remedies.

There is an increasing feeling that it would be less difficult than heretofore has been supposed to obtain the enactment into law of some form of coal legislation. Coal legislation under circumstances such as are likely to prevail this winter would mean regulation. It might not be drastic in character but it would provide entry for the thin edge of the wedge, which then could be driven deeper and deeper at the whim of succeeding sessions of Congress.

A. W. Vogtle, traffic manager of the DeBardeleben Coal Corporation, Birmingham, Ala., has been appointed by President Gould, upon the recommendation of Director Yerkes, of Alabama, to the vacancy on the Foreign Trade Committee of the National Coal Association, created by the withdrawal of J. W. Whatley, formerly connected with the DeBardeleben Corporation, who has retired from the industry.

New Mine Has Wet Opening

Memories of pre-Volstead days were vivid in the minds of many present at the recent formal opening of the Faraday Mine of the Pocahontas Fuel Co. Little Miss Jones, daughter of James Elwood Jones, first vice-president and general manager of the company, broke a bottle of fizzy liquid over the first 70-ton railway car loaded to capacity for shipment from the mine. A number of prominent officials of the company and of the Norfolk & Western Ry. gazed thirstily at the young lady during the hallowed ceremony.

Output at the mine is now limited to about four cars a day, as the coal is being shipped from a temporary tipple. Officials of the company state, however, that two new steel tipples will be ready in December and that by January shipments will be at the rate of forty-eight cars a day.

The town of Faraday straddles the West Virginia-Virginia line, lying partly in McDowell County, W. Va., and partly in Tazewell County, Va. The company has built a church, places of amusement and everything essential to livable community environment.

Maintenance Men Called Out At Madeira-Hill Mines

C. J. Golden, president of District 9, United Mine Workers, issued an order Oct. 7 calling out all maintenance men in the employ of Madeira, Hill & Co., operating mines in the vicinity of Shamokin and Frackville, Pa. Withdrawal of the men was ordered because of the refusal of the company to cease loading stocks of surplus coal at the Natalie colliery, near Mount Carmel. An ultimatum threatening such action was served upon the company a week ago. About 400 men are affected by the order, which became effective last Thursday.

French Acquire Rhine Coal Land

A French industrial group headed by the De Wendel Corporation purchased on Oct. 1 from the Krupp interests a large coal tract in the left Rhine district of Moers. The field, which has an area of 7,500 square miles, has never been worked.

To Fight Lease of Virginian By Norfolk & Western

The Chamber Commerce of Norfolk, Va., has joined the City Council, and the State of Virginia in asserting strong opposition to the proposed lease of the Virginian Ry. by the Norfolk & Western. The basis of the opposition is the belief that the absorption of the Virginian, largely a coal carrier, would mean the elimination of competition in the coal handling business.

The City of Norfolk has underwritten a fund of $5,000 to pay counsel to fight the proposed lease before the Interstate Commerce Commission. Coal men are divided on the question, though many of the most prominent members of the trade oppose the proposed lease.

The two railroads parallel each other a considerable distance from the West Virginia coal fields into Norfolk. The Virginian has no Western connections, being largely a coal line from the mines to tidewater. Business agencies opposing the merger have put forth the opinion that the competition of the two lines now stimulates trade, in view of the fact that much of the Norfolk & Western business to this port is coal. They have expressed the belief that the merger would curtail the business of both lines to tidewater.

The Interstate Commerce Commission has permitted the following companies to intervene in the petition filed by the Norfolk & Western Ry. Co. for authority to acquire control of the Virginian Ry.; Alpha-Pocahontas Coal Co., Covel Smokeless Coal Co., Devils Fork Coal Co., Faith Smokeless Coal Co., Gulf Coal Co., Gulf Smokeless Coal Co., MacAlpin Coal Co., Micajah Pocahontas Coal Co., Miller-Pocahontas Coal Co., Monticello Smokeless Coal Co., Morrison Coal Co., C. H. Mead Coal Co., Nuriva Smokeless Coal Co., Bailey-Wood Coal Co., Low Volatile Consolidated Coal Co., Slab Fork Coal Co., Winding Gulf Colliery Co. and Wyoming Coal Co.

To Import German Anthracite

German anthracite is to be imported to this country soon, the firm of J. P. Routh & Co., New York City, having made arrangements for the shipment of a quantity. Samples already received are said to compare favorably with Welsh anthracite received here. J. P. Routh, president of the concern, also heads the Riberena Fuel & Chartering Co., which is associated with the Rheinische Westphalian Coal Syndicate and the Deutsches Kohlen Depot. The office of the latter is at Hamburg and the company also has coal depots at seventeen ports on the Mediterranean in Europe and on the Atlantic coast of South America.

Twenty bids were submitted Sept. 30 to the Government Fuel Yards, Bureau of Mines, Washington, D.C., for supplying 20,500 gross tons of bituminous mine-run, principally for shipment to St. Elizabeths Hospital, located on the Baltimore & Ohio R.R. The tenders ranged from $1.40 per ton on 13,500 tons by W. H. Bradford & Co., Inc., to $2.52 per ton on 20,500 tons by the Burtner Coal Co.

Orders Wage Fixed Before Machines Are Put In

Frank Farrington, president of the Illinois union, United Mine Workers, has addressed a letter to the operators announcing that machines must not be put in the mines of that state without prior arrangement with the union as to the scale to be paid. He states that the rate will be in accord with agreement arrived at after consideration of the earnings of the men under previous working methods. It is evident, therefore, that settlements heretofore made may not be allowed to govern and that the union may try to make rates in one mine higher than those in another.

Forty-four First-Aid Teams In Alabama Meet

Forty-four teams from mining and industrial plants in the Birmingham district participated in the annual first-aid meet at Rickwood Field, Birmingham, Ala., Oct. 6. First honors to white teams went to the Empire team of the DeBardeleben Coal Corporation, captained by J. R. McGowen, with a score of 91⅝ per cent. The Coal Valley team of the same corporation carried off second prize with 88 per cent. Third prize went to the Mulga team of the Woodward Iron Co., which scored 87⅛ per cent.

First prize for colored teams was captured by the Mulga team of the Woodward Iron Co., with a score of 84⅜ per cent. The Parrish Mine team of the Railway Fuel Co. took second prize, while third honors went to the Sipsey Mine team of the DeBardeleben Coal Corporation, with scores of 79½ and 76⅜ per cent respectively.

The Townley Mine of the DeBardeleben Coal Corporation won first honors for women's teams, making a score of 80 per cent, the Woodward Iron Co.'s Dolomite team coming second with a score of 73⅜ per cent.

Among the out-of-town visitors present and taking part in the meet were Dr. W. S. Welch, state health officer; James M. Adams, Standard Oil Co., Baton Rouge, La.; D. J. Parker, U. S. Bureau of Mines, Pittsburgh; Dr. R. R. Sayers, U. S. Bureau of Mines, Washington; Dr. David J. Yates, American Red Cross, Atlanta; Dr. F. B. Merriwether, U. S. Bureau of Mines; Dr. W. R. Crane, Bureau of Mines; W. T. Lacey, Columbus (Ohio) station; James M. Webb, Knoxville (Tenn.) station; Alex Miller, Vincennes (Ind.) station; George W. Groves, Pittsburgh station.

The prizes awarded the various successful contestants were donated by the Alabama Mining Institute, the success of the meet being largely due to the untiring efforts of secretary James L. Davidson and assistant secretary H. E. Mills, of the Institute, C. E. Saxon, of the local branch of the Bureau of Mines and Chief Mine Inspector Charles H. Nesbitt.

$30,000,000 Coal Merger Closed in Tennessee

A merger of coal and iron companies said to represent approximately $30,000,000 was effected in Nashville, Tenn., Oct. 6 with the purchase by the Bon Air Coal & Iron Corporation of the properties of the Tennessee Consolidated Coal Co. and the Chattanooga Gas & Coke Co. The price to be paid for each of these properties will be $1,250,000, the sale of the Chattanooga Gas & Coke Co. being subject to ratification by its stockholders before October 20.

Other companies which will be a part of the merger are the J. J. Gray, Jr., Foundry at Rockdale, Tenn., already acquired by the Bon Air company, and the Southern Ferro-Alloys Co., owning plants at Chattanooga and Cleveland, Tenn. The deal for the latter company has not been consummated, it was announced, but it is expected that its properties will be acquired.

The deal for the merger was consummated by William J. Cummins, vice-president and general manager of the Bon Air company. Negotiations extended over a period of twelve months. In the new corporation Mr. Cummins will be chairman of the executive committee. This will mark another step in the financial rehabilitation of Mr. Cummins, former head of the Carnegie Trust Co., New York City. Cummins was convicted of grand larceny in 1911 in connection with the alleged conversion to his own uses of a fund of $140,000 deposited in the trust company.

Associated with Mr. Cummins in the new company are William Wrigley, Jr., of Chicago; Col. Jacob Ruppert, of New York, and John McE. Bowman, of New York.

The handling of chemical byproducts from the production of coal, it is said, will be one of the activities of the new corporation.

The West Kentucky Coal Bureau, traffic organization for the operators of western Kentucky, with headquarters at Louisville, has announced the October meeting is to be held at the Peabody Hotel, Memphis. All regular meetings have been held at Louisville for years.

The City Council of Minneapolis has had the proposed ordinance to license retail fuel dealers before it for some weeks, and the author has made several attempts to force consideration. It is due to come up for consideration soon. It proposes a fee of $50 a year and seeks to enforce a responsibility upon coal dealers.

Within the next sixty days, according to advices coming from Hazard, Harlan and other southeastern coal points, the Louisville & Nashville R.R. will commence actual work of hooking up its lines with those of the Carolina, Clinchfield & Ohio R.R. One piece of mountain work is said to involve about $20 000,000. Coal men are particularly interested because of the fact that this will give another outlet to the seaboard.

Pittsburgh Coal Co. To Open Seventh Mine Under 1917 Wage Scale

Some time during the current week the Pittsburgh Coal Co. will start work at its third mine in the western Pennsylvania district on the 1917 scale. This announcement was made by company officials when preparations for resumption at Midland No. 1, three miles from Canonsburg, were revealed. This mine is in Washington County, the other two, Banning No. 1 and No. 2, being in Fayette and Westmoreland Counties, respectively. When Midland No. 1 is started the company will still have thirty-seven mines idle in western Pennsylvania.

Former employees of the company at Midland petitioned the company to return to work at the 1917 scale. The mine has been closed since November, 1923. The normal capacity is about 400 men. H. M. White is division manager in charge of operations there. A report said the company planned evictions at this mine, but officials of the company denied this report.

Midland No. 3 mine, near the one which is to be opened, was dismantled last spring and the tipple torn down. Midland No. 2 was worked out years ago.

When Midland mine is started the company will have seven operations at work on the 1917 scale with four working in eastern Ohio.

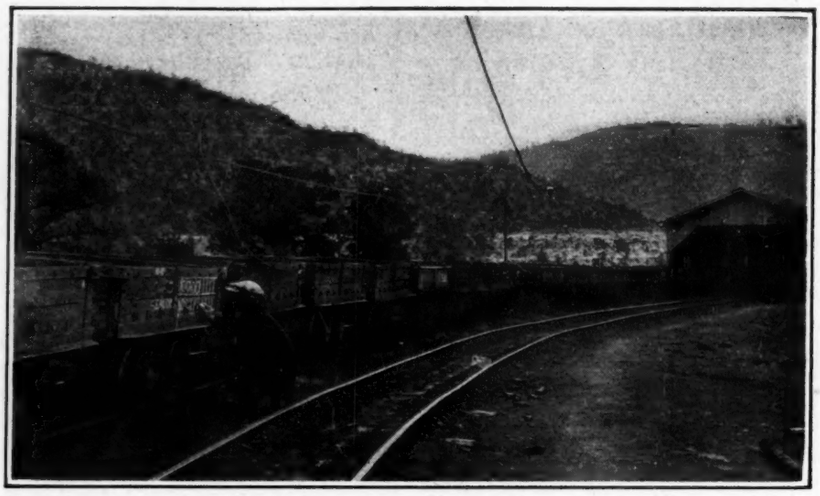
A mob of 100 men, women and children lined the road at the entrance to the Warden tipple of the Pittsburgh Coal Co., four miles from West Newton, one day last week and stoned 50 men as they were going to work at the mine. One man was injured. The men are doing construction work underground and are not engaged in mining. Protection was asked from Westmoreland County officials.

Utilities Consume More Coal And Less Oil in August

Public utility power plants in the United States consumed 3,338,956 net tons of coal in August, according to a report by the U. S. Geological Survey. This compares with 3,166,703 tons in July, as shown by revised figures. Fuel oil consumption by utilities in August totaled 743,213 barrels, compared with 852,947 barrels in July as shown by revised figures.

The average daily production of electricity by public-utility power plants in August was 173,100,000 kw.hr., a little more than the average daily output for July.

The average production of electricity during June, July, and August was remarkably uniform and there was no marked decrease in July as in previous years. The average output for August was only 0.4 per cent larger than that for July, which is much less than the average of previous years for that month.



Sending World's Series News Into the Mine

The Phelps Dodge Corp., at Dawson, N. M., believes in keeping its men satisfied. One of the "little extras" is illustrated here. While the American and National League champions are battling for the baseball supremacy of the world, a clerk, upon getting the score by innings, inscribes it on the sides of cars on their way into the mine. Thus it is not necessary for baseball fiends among the miners to lay off and hang around an outdoor scoreboard.

Approve Coke Rates in New York

The New York Public Service Commission has approved the following freight rates of the Buffalo, Rochester & Pittsburgh R.R. on coke (also breeze, dust and screenings) carload minimum weight 60,000 lbs. in open cars, from Buffalo, rates per net ton, to stations South Park-Lackawanna: To East Hamburg, inclusive, 80c.; West Falls to Glenwood, inclusive, $1.01; Footes to Edies Siding, inclusive, $1.13; Riceville to Ashford, inclusive, $1.26; Ellicottville to Salamanca, $1.39; (reductions from class rates); to Jewettville, $1.01, (reduction 38c.) effective Oct. 29, 1925.

Also of the Delaware, Lackawanna & Western on coke (also breeze dust and screenings), carload minimum weight 50,000 lb. in open cars, except when cars are loaded to cubical or visible capacity, when actual weight will apply: From Harriet to South Park-Lackawanna on Buffalo, Rochester & Pittsburgh, $1.13 per net ton (reduction from class rates); effective Oct. 28, 1925.

The U. S. Civil Service Commission announces open competitive examinations for engineer, $3,800; associate engineer, $3,000; assistant engineer, $2,400. Applications will close Oct. 20. The examinations are to fill vacancies occurring in the federal classified service throughout the United States. At present there are two vacancies for assistant electrical engineer, Bureau of Mines, for duty at Pittsburgh, Pa., and one vacancy for associate engineer (naval architecture) in the Bureau of Construction and Repair, Navy Department. Full information and application blanks may be obtained from the U. S. Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the post office or custom house in any city.

Coal Commission Report Ready in November

The first edition, numbering 6,500 copies, of the report of the U. S. Coal Commission will be ready for distribution in November, according to word from the Government Printing Office. The report will appear in five parts, one of which is composed exclusively of charts and tables. Interest in the report has been revived by the recent public utterances of John Hays Hammond, who, as chairman of the Fuel Committee of New England Governors, made frequent reference to the recommendations of this fact-finding commission which he headed and which ended its labors two years ago.

Lignite Output in Italy Drops

Lignite production in Italy is decreasing, according to Henry C. McLean, American Commercial Attaché at Rome, now in Washington. Such coal deposits as the country affords have a high sulphur content and have only restricted use. Nevertheless the lignite, which was used extensively during the war, has greater possibilities, though foreign coal again is preempting the market.

Imports of coal into Italy now are at the rate of 10,000,000 tons annually. Despite the rapid harnessing of water power imports of coal are increasing.

British coal has a great advantage in Italy, Mr. McLean points out, partly because everyone knows how to burn it and partly because deliveries can be made so much more quickly than is possible with American coal. Despite these handicaps 537,000 tons of American coal was sold in Italy last year. The maintenance of even that volume of imports of American coal is dependent on the availability of very low ocean freight rates. These have not prevailed during 1925 so there has been a decided decrease in the amount of American coal absorbed.

Output Resumes Upward Curve In West Virginia Strike Region; Miners' Band Arrested as Pickets

The second strike call of the United Mine Workers to the non-union coal miners in northern West Virginia seems to have little effect on the general situation thus far. In the week ended Oct. 3, the first full week following the strike, the non-union coal production was 9,146 cars, a decrease of 621 cars compared with the previous week. Non-union operators contend that the heavy pay day of Sept. 26 and the opening of the gunning season were the chief factors in keeping the miners out of the pits in the region. In the same week the union mines loaded 1,382 cars, or 5 cars less than in the previous week, which had but five workdays due to Sept. 26 being set aside as a holiday because of the visit of International President John L. Lewis.

Non-union coal production took an upward curve last week. In the first three days of the week the non-union mines in the 12½ counties of northern West Virginia loaded 4,978 cars of coal, compared to 4,564 cars in the corresponding period of the previous week. A slight increase was noted in union tonnage, 832 cars having been loaded in the first half of the week compared to 801 cars in the corresponding period of the previous week.

Car Loadings Increase

The non-union coal loading in the region totaled 1,744 cars Oct. 7, the heaviest daily non-union production since Sept. 23, when 1,767 carloads was produced. On the same day the union mines loaded 301 cars of coal, the heaviest daily loading of union plants since April 10, when 309 cars was reached. With 212 non-union mines at work in the 12½ counties, more open-shop plants worked Oct. 7 than on any day since the strike began on April 1. Thirteen union mines are active in the whole region.

After listening to testimony for four days in connection with the fifty-four union pickets haled into court for alleged violation of an injunction granted to miners at the New England Mine of the Consolidation Coal Co., at Watson, Judge Winfield Scott Meredith, in the Marion County Circuit Court, on Oct. 8 dismissed Mayor Bennett of Monongah and three others, reserving decision in the case of the fifty others. Mayor Bennett is accused of being a member of the union as well as a sympathizer. Included in the picketers were the Monongah miners' band.

Under the injunction the union pickets are restrained from "picketing, patroling, establishing or maintaining any picket or patrol at or near" the mine for the purpose of "inducing, persuading, compelling or coercing, by insults, intimidation, threats, frightening, assaults" and other means men employed by the company to quit work.

One Italian practically refused to promise to stay off the picket line and the court held him under $200 bond in his own recognizance. The Italian said "he wanted to be a free man." Another Italian said he would rather go to jail 25 years than pay any attention to the injunction. One of the pickets entered a plea of guilty, but the judge did not accept the plea without the man having counsel. When he obtained counsel the plea was withdrawn. It developed that he was a member of the Monongah Band.

The miners' union contends that the picketing is within their constitutional rights as laid down by the higher courts. Some months ago Criminal Court Judge L. S. Schwenck laid down a decision on legal picketing, which is summed up in the following: "A single group of pickets, not to exceed three persons, is permissible, but picketing done otherwise is a violation of law."

Pickets in Monongah

The pickets gathered in Monongah as recently as Oct. 9, but remained away from the mine entrance, and while this is a violation of the spirit of the injunction, it probably is not covered by the writ.

Announcement was made by the union officials on Oct. 7 that the Wright Coal Co. has leased the West Fork Coal Co. mine, near Monongah, and signed the Baltimore agreement. The mine began work the following day and hundreds of union miners sought jobs, but all could not be put to work. The mine has been idle two years, but it is announced that it now had orders to work steadily.

For the first time in its history the United Mine Workers has resorted to the injunction, which according to Frank McCartney, of Clarksburg, international representative, was obtained recently to restrain officials of the Fairmont Big Vein Coal Co. from interfering with John Patterson, a striking union miner, who lives in a coal company house at Two Lick. Coal company officials, McCartney says, tore the roof off the house while Patterson's wife was sick.

Hold Many Mass Meetings

Miners' mass meetings continue to be held. Recent gatherings took place at Farmington, Rivesville, Worthington, Shinnston, Hilltop, Lowsville, Brady, Enterprise, Montana and other towns.

The Wheeling (W. Va.) office of the United Mine Workers, through Adolph Pacifico, in charge of the strike in the northern West Virginia Panhandle, announces that Joseph Angelo, international organizer working out of the office of Philip Murray, international vice-president, has been transferred to Fairmont. James McCormick, of Wheeling, has been appointed vice-president of Sub-District No. 6 of District No. 6, Cambridge, succeeding John Hone, who has been named president of Sub-District No. 6 in place of David Watkins, appointed vice-president of District No. 6 to succeed William Roy.

Eight Months to Locate Coal Man's Heirs

After more than eight months' search word has been received from five heirs to the $55,000 estate left by Gould L. Saunders, of Saunders & Ashbaugh, coal dealers of Columbus, Ohio, who died eight months ago. In the will he specified that the residue of his estate after a bequest to the widow was paid was to be divided among his brothers and sisters. Neither the widow nor Mr. Saunders' business partner knew of the whereabouts of these heirs and it required a long search to locate three brothers and two sisters.

Coal Output and Imports by Canada Higher in July

Output of coal from Canadian mines during July was 744,087 tons as against 736,851 tons in June, and an average for the month during the five preceding years of 1,033,097 tons. Production by provinces in July showed slight gains over June in Nova Scotia, Saskatchewan and Alberta; but in comparison with the five-year average outputs for the month only Saskatchewan and Alberta were higher.

Imports of coal from the United States and Great Britain in July amounted to 1,788,502 tons as compared with 1,470,416 tons in June and the five-year average of 1,747,492 tons. Receipts from Great Britain during the month amounted to 115,613 tons. For the first seven months of 1925 the total amount of coal imported into Canada was 8,389,650 tons, or 10 per cent below the preceding five-year average for the period.

Imports of anthracite totaled 558,873 tons in July. This was 151,352 tons above the tonnage imported in June and about 40 per cent above the five-year average for the month. Anthraciate imported from the United States amounted to 450,262 tons while 108,611 tons came from Great Britain. The total anthracite imported during the seven months ending July, 1925, was 2,593,963 tons, an increase of 7 per cent above the previous five-year average.

Exports of Canadian coal in July were 38,634 tons; June, 43,296. Comparison of the July exports with the preceding five-year average showed a decrease of 76 per cent. Total exports for the year to date amounted to 333,498 tons, or 66 per cent less than the five-year average.

The total number of men employed in the coal mines of Canada during July was 14,702, of whom 10,421 worked underground and 4,281 on surface, as compared with a total of 18,611 in June, of whom 14,195 worked underground and 4,416 on surface. Production per man was 50.6 tons in July as against 39.4 tons per man in June. During July, the production per man-day was 2.3 tons, as compared with 3.3 tons in June.

Bureau of Mines To Be Service Agency of Mining; Would Retain Committee

Reorganization of the Bureau of Mines so as to make it essentially the service agency of the mining industry and a central clearing house of information on matters pertaining to mines and mining in the interest of the industry and the public can be used as an argument against compulsory fact-finding or regulatory legislation. Congress almost invariably does things by law. The policy of Secretary Hoover is in striking contrast with that way of dealing with industry. He has been outspoken in his disapproval of any form of compulsion or regulation. The extensive fact-finding activities that he has initiated in his department are on a voluntary basis. He has put the whole matter of the reorganization of the Bureau in the hands of a committee representative of the major mining activities so that the reconstituted Bureau may be of and for the industry. Not only is the committee to advise on functions to be retained and functions to be added but he now plans to retain the committee as a permanent link between the Bureau and the industry.

The representative of the coal industry on this committee has been taking an active and helpful part. His expressions in connection with the work of the committee and the promise of former President Brydon, of the National Coal Association, to the Coal Commission give rise to the thought that the industry may be willing to make voluntary returns to the Bureau, which from now on is to be the out-and-out champion of those who go down in the earth in mines.

Such action would meet the charge that the industry will not furnish the basic figures necessary to diagnose its ills. It would render unnecessary the proposal of Senator Oddie's bill to withhold cars from those who refuse to make returns of basic facts and would pave the way for the voluntary adoption of the many helpful provisions of that bill.

Both the Calder and the LaFollette bills, designed to regulate the coal industry, provided for the collection of extensive statistical and economic data. This was pointed to as being in the interest of the industry itself, but these bills were by and for everyone except the coal industry. The milder Frelinghuysen bill, which followed, was characterized by the coal industry as an effort to treat the patient against his consent. Even the Oddie bill, which comes from a man of the mining industry, who simply has acted as a compiler of suggestions made by various persons who are regarded as being authorities on coal, is considered by the coal operators as something handed down from above.

Secretary Hoover apparently is in sympathy with the industry's attitude toward those bills. It is just as apparent that he does not agree with most of the recommendations of the Coal Commission. He doubtless has been deterred from expressing his disapproval in order to avoid a breach of etiquette toward a presidential commission. Instead of putting the great weight of his influence behind such things as federal licensing, graded taxation and control by the Interstate Commerce Commission he has worked to encourage the industry itself to learn its own mind and settle its own difficulties.

Secretary Hoover's experience with the Jacksonville wage agreement is thought to have increased his determination to go only so far as the industry desires.

The Reynders advisory committee probably will bring out a well rounded plan which will include some plan for furnishing essential facts concerning coal, using the channels of the coal trade for the purpose. This would be a complete answer, many think, to those who allege that the industry is not able or not willing to collect basic facts.

This illustration of coal is used because it happens to be the mineral which has figured most in the Congressional discussion. The contrast between doing things by legislation and doing things by and with the consent of the industry applies to the whole field of mining.

The search for a director of the Bureau of Mines, which really is a search for an under Secretary of Mines, since the eventual creation of the latter office is believed to be assured, also has been turned over to the industry's committee. The desire in that connection is to induce some broad-gaged man of the industry to take the place. It is known that Secretary Hoover prefers this type of man to the civil servant or the academician, but the chance of success in such a quest is known, from previous experience, to be small.

Will Not Disturb Rate Relationship

Rates from mines in the Harrisburg district of southern Illinois over interstate routes to Hoopeston, Ill., are not unreasonable or unduly prejudicial in comparison with rates to Chicago, Indianapolis and Vincennes, Ind., declares the Interstate Commerce Commission in a recent mimeographed report dismissing the petition of the Hoopeston Grain & Coal Co. vs. Chicago & Eastern Illinois R.R. Co. et al. and related complaints.

"The conditions affecting the rates to Chicago, Indianapolis and Vincennes," says the opinion, "are not comparable with those affecting the rates to Hoopeston, and the record does not justify condemnation of the rates from the southern Illinois group to Hoopeston or the application to that point of lower rates from the points of origin named (viz., Harrisburg, Ledford, El Dorado, Carrier Mills and Norris City) than those from the group."

British Miners Agree Provisionally to Join National Coal Inquiry

At a second conference in London, Oct. 9, the delegates of the British Miners' Federation reconsidered their previous decision and voted to participate in the royal commission recently appointed to inquire into the entire coal industry. The federation's participation is contingent upon further efforts to eliminate the cause of their grievances regarding wage reductions in certain regions and the refusal of the employers to grant unemployment benefits.

At the conference of Oct. 8 the delegates rejected participation in the Coal Commission by a card vote of 477,000 to 332,000. The conference was called to consider the situation arising through the interpretation of the truce terms. Two weeks ago Premier Baldwin, after lengthy consideration, accepted the contention of the mine owners in their dispute with the Miners' Federation of their right to reduce wages in certain regions.

The miners argued that this decision was at variance with the governmental subsidy granted to enable mine owners to maintain the current scale of wages pending an inquiry by a royal commission.

A majority of the miners' executives were opposed to drastic action, but the delegates themselves were sharply divided and a heated debate ensued. The miners' secretary, A. J. Cook, was absent through illness.

The voluntary organization for the maintenance of supplies in the event of a general strike was condemned at a conference of the Scottish miners at Glasgow, Oct. 8. In protest against such a body being formed in the United Kingdom, a resolution was passed expressing the view that such an organization would be used against the miners if an industrial conflict occurred in which the miners were involved.

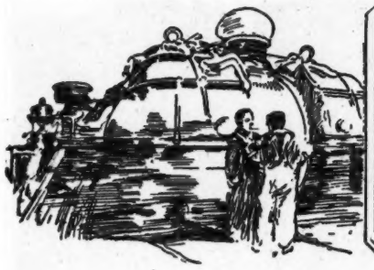
Robert Smillie, Member of Parliament and president of the Scottish Miners' Federation, in an address said it was the government's business to protect the people and not the business of a private body of men. He regarded the "O.M.S.," as the organization for the maintenance of supplies is coming to be known, as a menace to organized labor and intended to help the capitalists "continue the enslavement of the workers."

Westbound coal movement through the canals at Sault Ste. Marie, Mich., and Ontario, in September, 1925, totaled 1,389,595 net tons of bituminous and 58,490 tons of anthracite.

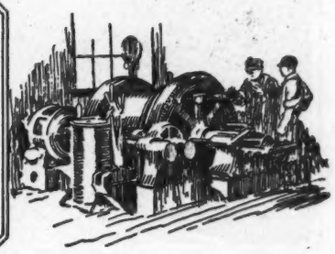
Strikes and Lockouts in Pennsylvania Anthracite Region, 1920-1924

District	1920		1921		1922		1923		1924	
	Days	Men	Days	Men	Days	Men	Days	Men	Days	Men
Lehigh	15	15,666	18	10,847	137	19,066	19	18,593	15	10,145
Schuylkill	17	41,94›	5	›,523	137	41,893	19	43,524	7	12,333
Wyoming	23	39,229	17	3›,747	138	80,753	20	72,772	19	48,795
Sullivan County	..	.....	..	.....	144	730	18	696	..	.....
	19	96,840	16	52,117	138	142,442	19	135,585	16	71,273

Compiled by U. S. Bureau of Mines.



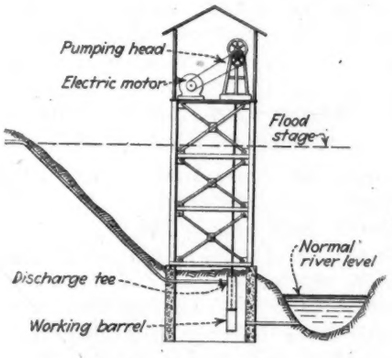
Practical Pointers For Electrical And Mechanical Men



Electric-Driven Deepwell Pump Installed on Top of Tower

Electrification of a mine often brings up interesting problems concerning the outside pumping equipment. A. W. Spaht, of Christopher, Ill., electrical engineer of the Old Ben Coal Corporation, solved one of these problems by installing an electric-driven deepwell pump in a rather unusual position.

At one of the Old Ben mines, about three miles from Herrin, a direct-acting steam pump had been used to force water from the Big Muddy River to a storage tank. During floods this steam pump had been submerged to a depth of 20 ft., which, of course, did no harm to such a pump. When the question of installing an electric pump came up for discussion, the first consideration was to provide protection from floods.



Motor Is Above Flood Level

Utilizing a deepwell pump in this fashion obviates the necessity of building an elaborate water-tight pump house with walls extending above the high-water level.

The usual but rather costly solution would have been to build a pumping station of water-proofed concrete, with the walls carried to a point well above the flood level. Instead, a geared, deepwell pump of the reciprocating type, with double-acting working barrel, was employed, and the pumping head and motor installed on the top of a 20-ft. steel tower.

This arrangement has proven to be a satisfactory and economical method of protecting the motor, and in cold weather has the advantage that the water piping is protected from freezing. The latter feature is provided by having the discharge outlet located in the well several feet below the ground level.

Hammer Blow Completes Throwing of Switch

Ten years ago, P. A. Tice, at that time the blacksmith, but now the chief electrician of the Hazard Blue Grass Coal Corp., Hazard, Ky., built the semi-automatic switch stand illustrated in the photograph reproduced here. This type of stand has since been copied for use at a number of mines in the Hazard field.

The weighted handle of the stand is pivoted so as to have several inches of play with respect to the operating lever. When a locomotive or mine car runs through the switch the movement of the rail points raises the weighted handle to a position beyond dead center. The handle then falls to the other side and the resulting hammer blow completes the throwing of the switch to the opposite position.

The weight of the handle continues to hold the switch points tightly. A distinct advantage of this switch stand is that the operating lever's range of movement is greater than that normally required. This feature automatically takes up any play and thus eliminates the necessity of frequent adjustment of the switch rod.

How Arc Welding Proves Its Value

Arc welding has been used to a great extent, both for repairs and construction at our properties. The accompanying illustration shows a recent construction job which was a rush order for a shaker screen for one of our tipples that formerly had only plain bar screens. This screen has a capacity of more than 1,000 tons in 8 hr. of run-of-mine over 2⅜-in. perforations and was made up of structural shapes and sheets. The fabricating was done entirely by means of arc welding. No bolts were used in any part of the equipment except to hold down the perforated sheets and to secure a removable end plate. The whole job

The First Switch of Its Kind in the Hazard Field

This home-made switch stand has been copied for use at a number of mines. A mine car or locomotive running through the switch raises the weighted handle to a point beyond dead center. The handle then falls to the other side hitting the short lever a blow which completes the movement of the switch points.

Saving

Nearly all this structural work was made by arc welding. Quick, inexpensive jobs save both time and money. When the parts are welded together there is no bother about different size drills and bolts.

cost only about half as much as a similar set of screens which were recently purchased.

When a chute is needed, or it is necessary to make alterations to existing chutes, the arc welding rheostat is a most satisfactory device for the job. It is only in cases of absolute necessity that we ever use bolts or rivets for such work. We are now building an automatic substation in a location rather difficult of access, and the framing of this building is entirely arc welded.

Another rather interesting application of arc welding is in the salvage of broken mine car wheels. In cases where the tread is broken out between two spokes it is a relatively easy matter to save the wheel. A short piece of flat iron is bent to the proper shape and fitted in between the spokes. It is held in position by a deposit of metal on each spoke and the broken part of the tread is then built up on this bar as a base.

R. R. SCHELLENGER,
Electrical Engineer.
Elkhorn Coal Corporation,
Wayland, Ky.

Glass Guard Protects Eyes From Stray Particles

The adage, "Familiarity breeds contempt," applies well to the average mine mechanic. However, if he happens to be so unfortunate as to have an eye seriously injured when grinding at an emery wheel or when doing some other job where chips are liable to fly, then such close familiarity with the danger of losing his eyesight invariably turns his contempt into caution.

The wearing of approved goggles is the best way of protecting the eyes, but unfortunately few have been converted to this idea and even those who have will sometimes neglect to put on the goggles when there is but a short job to do such as a bit of grinding. For this reason there are advantages in equipping grinders with a plate glass guard.

An example of a convenient home-made guard is that in use in the shop of the North East Coal Co., Thealka, Ky. As shown in Fig. 1 this device serves as a lamp bracket as well as a guard. The pipe on which the lamp and guard are mounted is supported from the ceiling and can be swung into a position to serve either of two wheels. Fig. 2 is a close-up of the leather-lined friction disks, at the ceiling, which ordinarily hold the pipe in a fixed position but which will slip when a small force is applied to the lower end to change the location of the lamp and guard.

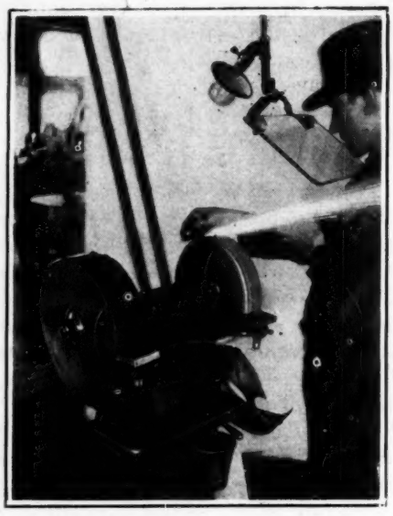


Fig. 1—No Danger to the Eyes

The plate-glass shield is adjustable to any desired position or angle and is high enough so as not to interfere with the work. It is a distinct advantage to have the lamp and guard combined in one.

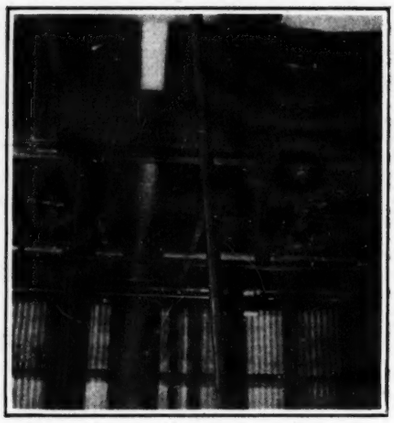


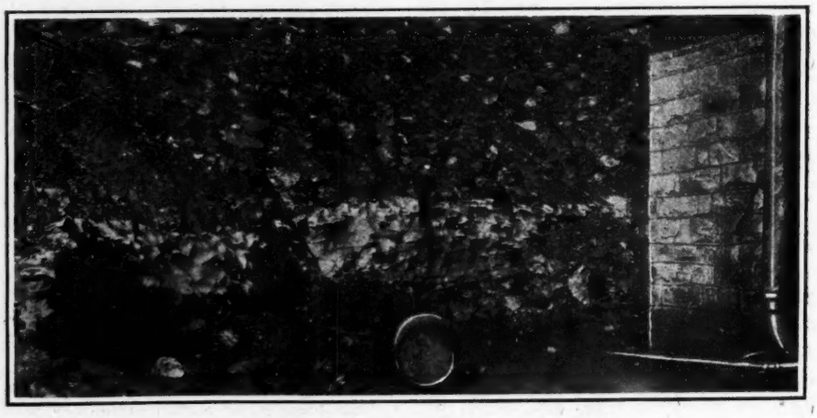
Fig. 2—Friction Disks at Ceiling Hold Lamp and Guard

A length of ¾-in. pipe forms the arm to which the lamp and guard are fastened. The leather-faced disks are clamped together tightly enough to hold the arm in any desired position.

Referring again to Fig. 1 it can be seen that the bracket supporting the piece of plate glass is mounted on the pipe in such a way that it can be rotated through a complete circle. A leather washer acts as a friction to hold it in a set position.

Refuse Bank Retained by Cement-Filled Wall

One of many uses to which a cement projector might be placed is clearly indicated in the accompanying illustration. A fan house had been erected at the bottom of a refuse bank but the rock tended to slide down the slope of the bank and crowd around the building. What really is the equivalent of a concrete retaining wall was erected to prevent further encroachment of the bank on the fan house. Large pieces of slate were laid in a pack wall, the interstices of which were filled with cement discharged under pressure.



Cement-Filled Wall Holds Bank from Sliding

This pack wall of slate was strengthened and held by a cement mortar which was applied by machine.

Problems In Underground Management

In Double Freeport Seam, Clay Is Better Than Rock Dust for Stemming

By J. H. Zorn

Safety Engineer, Ford Collieries Co.,
Curtisville, Pa.

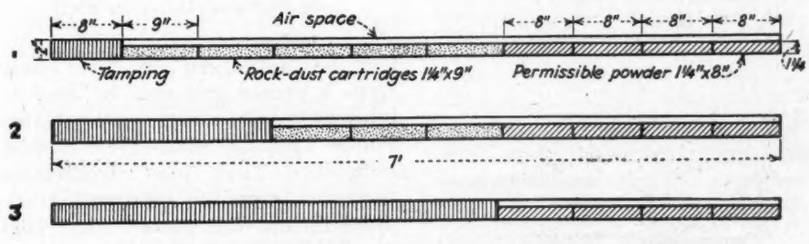
At the Berry No. 3 mine, of the Ford Collieries Co., tests with rock-dust stemming in the double Freeport seam proved that this method of charging powder was entirely unsatisfactory. The Freeport seam at that mine is about 6 ft. 3 in. thick with 12 in. of hard, tough, springy bone in the middle. The coal above this bone is spongy and that below is hard. Above the top coal is a 2 ft. layer of cannel coal which must be left in place in order to support the roof. Above that is a bed of shale.

The rock dust used was limestone pulverized so that 75 per cent of it would pass through a 200-mesh screen. It was packed in waxed-paper shells to form dummies measuring 1¼ x 9 in. The tests were made through a period of two weeks in fifteen rooms located in two sections of the mine. The boreholes were about 2 in. in diameter and 7 ft. long. The shots were made with the permissable powder regularly in use in this mine and the charges, which were of the customary size, consisted of from three and one-half to four cartridges, 1¼ x 8 in. in breaker holes and from one and one-half to two cartridges in rib holes.

In the course of the tests three different methods of tamping were tried. First, the dummies were pushed back to the powder, and the hole was filled to the collar, the last three dummies being firmly tamped. This gave about 8 in. of solid tamping at the mouth of the borehole. When the charges, tamped in this way, were shot, the rock dust was blown from the boreholes and was distributed over the floor for a distance of about 25 ft. back from the face. The paper containers, in which the rock dust had been confined, were found on the floor within the dusted area but minus the wax coating. These shots gave clear evidence of having blown out.

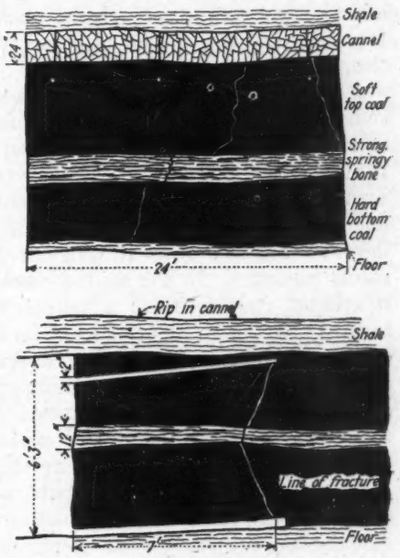
Prevent Blownout Shots

Now such shots are dangerous whether rock dust stemming is used or not, and it is my theory that they always indicate poor blasting practice. Therefore, a second method of tamping was tried in an effort to prevent the charges from blowing out. The first dummies were pressed back lightly against the charges as before, but the later ones were tamped firmly to increase the length of the solid stemming to about 2 ft. With this method there were no blownout shots but the coal was improperly blasted. The strong bone and some of the coal hung at the back of the cut, so that much pick work was required in every place to square up the face for the next shot. This showed that there was still a tendency for the gases of the explosion to work forward toward the mouth of the hole instead of exerting their greatest energy on the back of the cut.



Three Methods of Charging All of Which Gave Poor Results

In the first instance with 8 in. of tamping the shots blew out but scattered rock dust for a radius of 25 ft. In the second case with 2 ft. of tamping the strong bone and part of the coal back of the cut hung and had to be dislodged by heavy blows of a pick. In the last of the three cases, the results approached those with clay stemming but were always inferior to those obtained when clay was employed. In every case where rock dust was used, the cannel coal was badly ripped.



Method of Placing Shotholes at Face of Room

The illustration shows how the coal is ripped irregularly by the shot and the cannel is cut by the explosive. The fracture in the upper half shows the effect of the buster shot and of a rib shot, respectively.

Clay Stemming Best

Consequently, a third method was tried, in which the hole was tamped solidly from the explosive charge to the collar. This gave the best execution, coming nearest to the results obtained where clay stemming is used, but in no case were the results as satisfactory as are obtained when the hole is stemmed with clay.

In all these shots with rock-dust stemming, moreover, the cannel coal was badly damaged, a most undesirable feature. Although 2 ft. thick, the cannel ripped along the length of the borehole where the stemming was compressed by the explosion,

the cutting in many cases being from 5 to 5½ ft. long. This weakened the roof alarmingly.

In every case the rock-dust stemming seemed to leave too much air space for the explosive to work effectively. In every shot the charge spent its entire force in the spongy top coal and cannel, allowing the bone and bottom coal to settle down in one big piece and leaving an irregular face. In consequence, the loader had to clean and square up the place for the next cut of the machine at the expenditure of much labor.

As a whole these tests indicated somewhat conclusively that the use of rock-dust stemming offers no advantages in the double Freeport seam. In the first place it proved not to be a practical means of dusting the face and thus it was not a safety measure. In the second place, it created in this seam a tendency toward blownout shots—a hazard which good blasting practice seeks always to avoid. Third, it did not decrease the quantity of explosive required. Fourth, shots with rock-dust stemming did not square up the face nor bring down the bottom coal in good condition for loading. And lastly, the shots thus stemmed so damaged the roof that the timbering expense and the danger of mining were increased. For these reasons, in the double Freeport seam the standard method of tamping shots with clay seems preferable to the use of rock dust.

Car Operates Its Own Spray

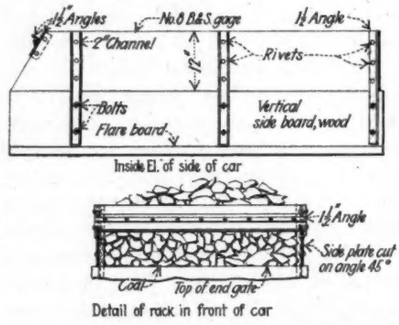
At a mine of the Union Pacific Coal Co. at Reliance, Wyo., John Holen, the superintendent, takes good care of the watering of his empty mine cars. As they come up the grade from the tipple one or two at a time they strike a lever at a certain point in the road. This engages with the bumper of the car or cars and is held down till it or they have passed, when a counterweight brings the lever back into position. As the lever is rigidly attached to the stem of a water valve, its operation by the passing of a car projects a stream of water over the wagon, thoroughly wetting the bottom and what dust remains after dumping. That is why dust in the roadways of Reliance retains that grayish cast which is indicative of the presence of an excess of inert material. The flow of water is shut off as soon as the car has passed, which is an item of no little importance where all the water comes from deep wells and has to be pumped long distances.

Keeps Him Thinking Daily

To keep safety always uppermost in the thoughts of the mine worker seems impossible. The best that can be done is to jog his memory daily. This picture shows a bulletin of the Old Ben Coal Corporation posted conspicuously at the shaft mouth, just above the signal code. The messages which the bulletins carry are changed daily. It is the endeavor to keep them terse, concise and to the point.

Steel Siding Adds Capacity To Mine Cars

Machine loading has brought home forcibly to coal operators in Wyoming, as elsewhere, the need for large cars. Small cars might be satisfactory so long as men had to push them, but where they are handled mechanically a larger unit is desirable, especially as machines will not top a car with coal as miners have been in the habit of doing. At the Sweetwater mine of the Gunn-Quealy Coal Co. the car sides have been raised in the manner shown in the accompanying illustration, a 12-in. girdle of steel plate being erected on four channels attached to the old wooden sideboards. In the front the girdle is only 6 in. deep and it is the lower 6 in. that is omitted, thus giving the large lumps an opportunty to escape without hindrance when the car is dumped. The addition of this girdle increases the capacity of the car from 3,000 lb. to 4,000 lb.

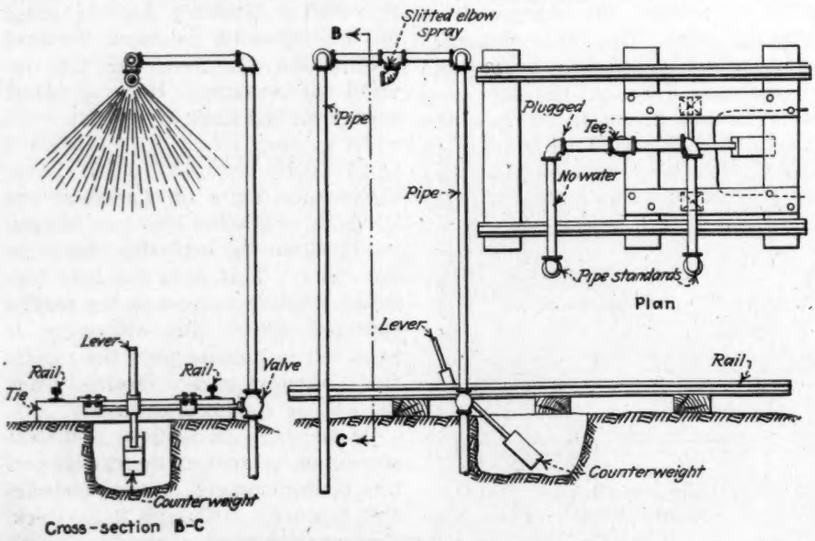


This Aids in Car Loading

A steel "girdle" 12 in. high at three sides and 6 in. high at the car's dumping end makes it possible to use the old cars with mechanical loaders without a reduction in the average load.

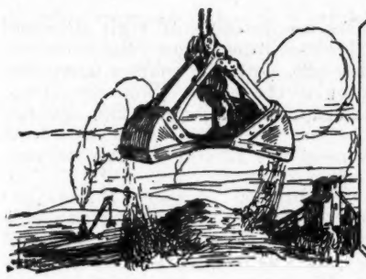
Use Grease Gun in Fall

So that a reasonably stiff grease and yet one which will flow freely from a grease gun may be used to lubricate mine cars, the Union Pacific Coal Co. greases its cars in autumn. Thus one application serves to keep the cars well lubricated during the winter. The heat resulting from the turning of the wheels and the mine temperature is sufficient to keep the grease of the proper viscosity. If this work is left until winter it becomes difficult.

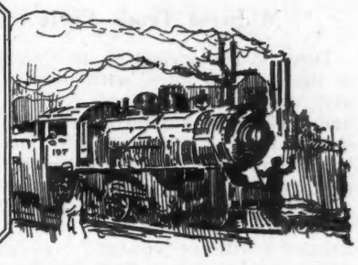


No Attendant Is Needed to Wet Down Cars.

The automatic arrangement of operating this spray saves time as well as men and sends trips of coal out with a minimum of dust spillage along roadways and slopes.



Production And the Market



Soft Coal Market Feels Stimulus of Cool Weather; Anthracite Substitutes Catching On

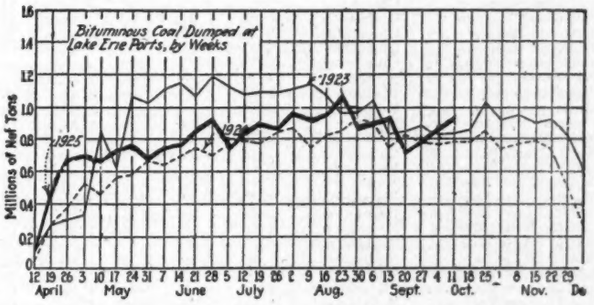
The soft coal market having practically settled down to a weather proposition a cool wave was perhaps the most pressing need to give stimulus to the trade, and, strange to say, this was forthcoming last week, and over a rather broad area, too. As a result the demand for coal has picked up noticeably after a distinct letdown following the spurt coincident with the suspension of work at the anthracite mines. A falling off in operating time at some of the mines has helped to bring about a notable firmness in West Virginia smokeless, except in the New England market, where indifference of steam coal consumers has made it difficult for shippers to place spot fuel. Introduction of the new all-rail rate on low volatile from West Virginia to the Northeast, on Oct. 15, is being awaited with interest.

The call for prepared sizes, especially 6-in. lump, has been quite brisk in the Middle West, but southern Illinois is having some trouble with steam coals, consumers being able to get all the 2-in. screenings they want at their own price. Business has been lively in the Northwest, coming from a broad territory and all classes of consumers. Unaided by seasonable weather, the trade in Kentucky has had a slight sinking spell, domestic being the weaker side. Demand is good in the Southwest. Utah has been handicapped by unseasonably warm weather, however.

A new record for October in the movement of coal to the lakes was made at Cincinnati last week, most of it at higher prices. Heavy domestic bookings also are a feature, smokeless egg in some instances bringing better prices than lump. The other Ohio markets likewise are doing better. Eastern markets as a rule are comparatively easy, having been but little affected by the weather.

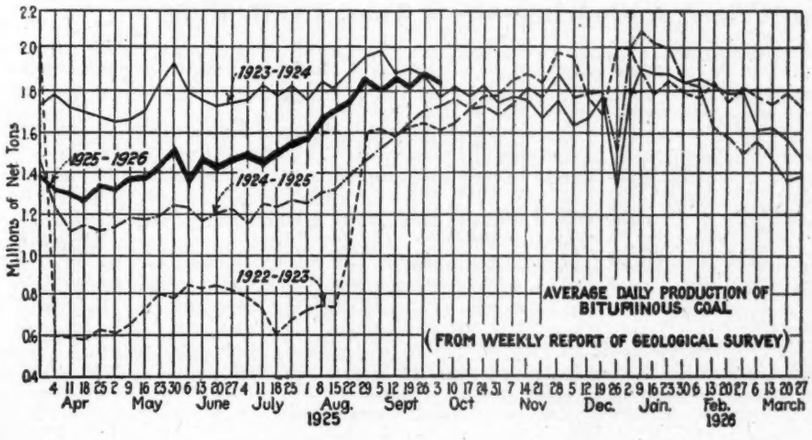
Retail stocks of the larger domestic sizes of anthracite are dwindling rapidly and dealers are busily replenishing stocks with substitutes. Coke is in such strong demand that a number of manufacturers are booked well into November. The call for screened bituminous coal has been comparatively light thus far. Domestic sizes of hard coal are virtually off the wholesale market except for a few boatloads of egg, stove and chestnut at New York, quoted up to $22.50 alongside. Quotations on stock pea are reported at $8@$9 f.o.b. mine and $11@$13 alongside; No. 1 buckwheat, $2.60@$2.85.

Output of bituminous coal in the week ended Oct. 3 is estimated by the Bureau of Mines at 10,979,000 net tons, compared with 11,211,000 tons in the previous week. Anthracite production was 14,000 net tons, a gain of 1,000 tons over the week before.



Coal Age Index of spot prices of bituminous coal on Oct. 12 stood at $1.75, the corresponding price being $2.12.

Dumpings at Lake Erie ports during the week ended Oct. 11, according to the Ore & Coal Exchange, were: Cargo, 879,788 net tons; steamship fuel, 44,880 tons—a total 924,668 net tons, compared with 837,410 tons in the preceding week. Hampton Roads dumpings in the week ended Oct. 8 totaled 423,430 net tons, compared with 458,996 tons the week before.



Estimates of Production

(Net Tons)

	1924	1925
BITUMINOUS		
Sept. 19 (a)	10,156,000	10,880,000
Sept. 26 (a)	10,458,000	11,211,000
Oct. 3 (b)	10,614,000	10,979,000
Daily average	1,769,000	1,830,000
Cal. yr. to date	(c) 349,641,000	371,303,000
Daily av. to date	1,500,000	1,589,000
ANTHRACITE		
Sept. 19	1,851,000	9,000
Sept. 26	1,942,000	13,000
Oct. 3	1,425,000	14,000
Cal. yr. to date	(c) 68,796,000	61,680,000
COKE		
Sept. 26 (a)	132,000	176,000
Oct. 3 (b)	138,000	185,000
Cal. yr. to date	(c) 7,519,000	7,275,000

(a) Revised since last report. (b) Subject to revision. (c) Minus two days' production to equalize number of days in the two years.

Midwest Trade Feels Snap of Weather

Demand has picked up in Chicago and the Middle West in the last few days, with the appearance of some reasonably cold weather. Two or three weeks of warm weather had caused the buying spurt engendered by the anthracite strike to die a lingering death. The idea is firmly intrenched in the minds of Illinois operators that the market from now on will largely depend upon the weather.

The recent cold snap brought about a brisk demand for prepared sizes, with 6-in. lump, as usual, in the lead. Southern Illinois operators were able to maintain their prices uniformly at $3.25, and report they have enough lump business on hand to keep them busy two or three weeks. The demand for 6x3-in. furnace and 3x2-in. small egg was good, although not as strong as for lump.

Steam coals continue to furnish a vexing problem to operators, as buyers are able to procure all the 2-in. screenings they want and at a price they are willing to pay, namely, $1.65@$1.75 for a high grade 2-in. coal. It is thought that steam coal from southern Illinois is kept at this low level by pressure through lower prices on non-union coal from western Kentucky, and on strip coal from the central districts of Indiana and Illinois. Non-union coals appear to be spreading into this market in increased volume.

No one appears to be taking any interest in the anthracite strike, as retail dealers are devoting all their time and energy in pushing suitable substitutes. Low-volatile smokeless coals are in fair demand, with the market anywhere from $4 to $4.50, according to the grade. Smokeless lump is plentiful and can be had in almost any quantities. Smokeless egg coal appears to be scarce. High-volatile coals from West Virginia and Kentucky are moving in fair volume, but with prices not too firm.

A slight drop in temperature in southern Illinois has brought about some activity in the movement of domestic sizes, which had been lagging; as a matter of fact, egg and nut are still slow. Only a few mines are getting as much as five days a week and all mines have "no bills" of some sizes on track. Steam shows a little improvement, but the smaller nut sizes are slow. Railroad tonnage at the shaft mines is light. Strip mines get good working time when the weather permits, recent rains having interfered with stripping activities. There is an available market for their production although prices are pretty low.

In the Duquoin district work continues about three to four days a week with plenty of "no bills" on track, no railroad tonnage and prospects not good. In the Mt. Olive district working time is better on account of increased demand for middle grade coals; steam is going principally on contracts. Railroad tonnage is fair in this district and domestic prospects are better. In the Standard field conditions are bad; movement is below normal and prices are below cost. There

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Low-Volatile, Eastern	Market Quoted	Oct. 13 1924	Sept. 28 1925	Oct. 5 1925	Oct. 12 1925†
Smokeless lump	Columbus	$4.35	$4.60	$4.60	$4.50@$4.75
Smokeless mine run	Columbus	2.20	2.55	2.55	2.40@ 2.75
Smokeless screenings	Columbus	1.20	1.50	1.50	1.40@ 1.60
Smokeless lump	Chicago	3.85	4.25	4.10	4.00@ 4.25
Smokeless mine run	Chicago	1.90	2.25	2.10	2.00@ 2.25
Smokeless lump	Cincinnati	4.50	4.75	4.35	**4.25@ 4.75**
Smokeless mine run	Cincinnati	2.35	2.35	2.35	2.25@ 2.50
Smokeless screenings	Cincinnati	1.30	1.85	2.00	*1.85@ 2.00*
*Smokeless mine run	Boston	4.30	5.20	4.85	*4.65@ 4.90*
Clearfield mine run	Boston	1.90	1.90	1.85	**1.70@ 2.10**
Cambria mine run	Boston	2.30	2.10	2.15	**2.00@ 2.40**
Somerset mine run	Boston	2.05	2.00	2.00	**1.85@ 2.30**
Pool 1 (Navy Standard)	New York	2.75	2.85	2.85	2.75@ 3.00
Pool 1 (Navy Standard)	Philadelphia	2.70	2.65	2.65	2.50@ 2.85
Pool 1 (Navy Standard)	Baltimore	2.60	2.30	2.30	2.25@ 2.35
Pool 9 (Super. Low Vol.)	New York	2.10	2.20	2.20	2.10@ 2.30
Pool 9 (Super. Low Vol.)	Philadelphia	2.15	1.95	1.95	1.95@ 2.00
Pool 9 (Super. Low Vol.)	Baltimore	1.85	2.05	2.05	2.00@ 2.15
Pool 10 (H.Gr.Low Vol.)	New York	1.90	2.00	2.00	1.85@ 2.15
Pool 10 (H.Gr.Low Vol.)	Philadelphia	1.75	1.85	1.85	1.75@ 2.00
Pool 10 (H.Gr.Low Vol.)	Baltimore	1.65	1.90	1.90	1.85@ 1.95
Pool 11 (Low Vol.)	New York	1.60	1.80	1.80	1.75@ 1.90
Pool 11 (Low Vol.)	Philadelphia	1.45	1.70	1.70	1.60@ 1.80
Pool 11 (Low Vol.)	Baltimore	1.55	1.70	1.70	1.70@ 1.75
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.55	1.55	1.55	**1.55@ 1.65**
Pool 54-64 (Gas and St.)	Philadelphia	1.50	1.60	1.60	1.50@ 1.70
Pool 54-64 (Gas and St.)	Baltimore	1.40	1.65	1.65	1.65@ 1.70
Pittsburgh sc'd gas	Pittsburgh	2.40	2.50	2.50	2.50
Pittsburgh gas mine run	Pittsburgh	2.10	2.15	2.15	2.10@ 2.25
Pittsburgh mine run (St.)	Pittsburgh	1.85	2.05	2.05	2.00@ 2.15
Pittsburgh slack (Gas)	Pittsburgh	1.25	1.55	1.55	1.50@ 1.60
Kanawha lump	Columbus	2.10	2.60	2.60	2.45@ 2.80
Kanawha mine run	Columbus	1.40	1.70	1.70	1.55@ 1.85
Kanawha screenings	Columbus	.90	1.30	1.30	1.25@ 1.35
W. Va. lump	Cincinnati	3.25	2.60	2.60	2.50@ 2.75
W. Va. gas mine run	Cincinnati	1.50	1.60	1.60	**1.60@ 1.75**
W. Va. steam mine run	Cincinnati	1.40	1.55	1.55	**1.50@ 1.65**
W. Va. screenings	Cincinnati	1.00	1.15	1.25	**1.15@ 1.40**
Hocking lump	Columbus	2.50	2.70	2.70	2.50@ 2.90
Hocking mine run	Columbus	1.60	1.65	1.65	1.50@ 1.85
Hocking screenings	Columbus	.90	1.30	1.30	1.25@ 1.35
Pitts. No. 8 lump	Cleveland	2.35	2.35	2.35	2.00@ 2.75
Pitts. No. 8 mine run	Cleveland	1.85	1.85	1.85	1.85@ 1.90
Pitts. No. 8 screenings	Cleveland	1.05	1.40	1.35	*1.20@ 1.30*

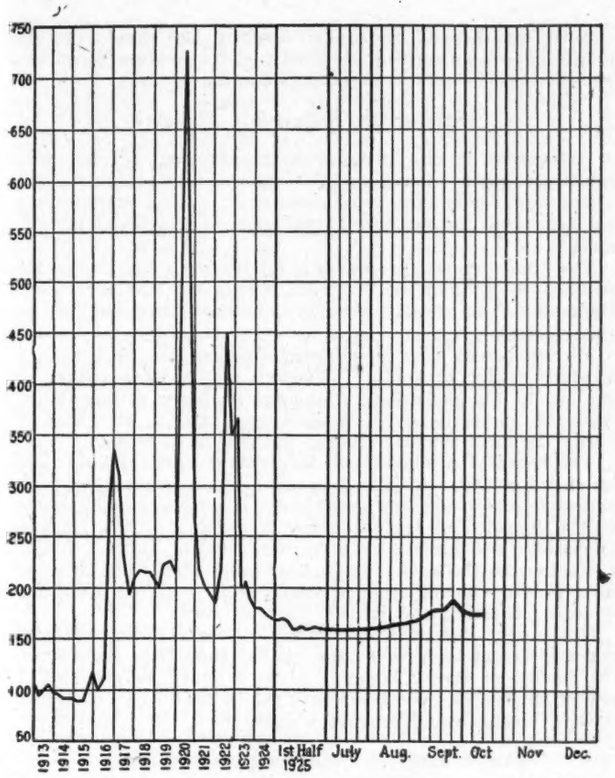
Midwest	Market Quoted	Oct. 13 1924	Sept. 28 1925	Oct. 5 1925	Oct. 12 1925†
Franklin, Ill. lump	Chicago	$3.35	$3.25	$3.25	$3.25
Franklin, Ill. mine run	Chicago	2.35	2.35	2.35	2.25@ 2.50
Franklin, Ill. screenings	Chicago	1.35	1.60	1.60	1.50@ 1.75
Central, Ill. lump	Chicago	2.85	2.85	2.85	2.75@ 3.00
Central, Ill. mine run	Chicago	2.20	2.10	2.10	2.00@ 2.25
Central, Ill. screenings	Chicago	1.15	1.55	1.55	1.35@ 1.75
Ind. 4th Vein lump	Chicago	3.10	3.10	3.10	3.00@ 3.25
Ind. 4th Vein mine run	Chicago	2.35	2.35	2.35	2.25@ 2.50
Ind. 4th Vein screenings	Chicago	1.35	1.60	1.60	1.50@ 1.75
Ind. 5th Vein lump	Chicago	2.85	2.35	2.35	2.25@ 2.50
Ind. 5th Vein mine run	Chicago	2.10	1.95	1.95	1.85@ 2.10
Ind. 5th Vein screenings	Chicago	1.25	1.20	1.40	1.35@ 1.50
Mt. Olive lump	St. Louis	2.85	2.50	2.50	2.50
Mt. Olive mine run	St. Louis	2.50	2.00	2.00	2.00
Mt. Olive screenings	St. Louis	1.25	1.75	1.75	1.75
Standard lump	St. Louis	2.85	2.25	2.25	2.25
Standard mine run	St. Louis	1.80	1.80	1.80	1.75@ 1.90
Standard screenings	St. Louis	.80	1.15	1.15	1.15
West Ky. block	Louisville	3.85	1.90	1.90	*1.65@ 1.85*
West Ky. mine run	Louisville	1.70	1.35	1.35	*1.10@ 1.50*
West Ky. screenings	Louisville	.80	.95	.95	**.85@ 1.10**
West Ky. block	Chicago	2.85	2.05	2.05	1.85@ 2.25
West Ky. mine run	Chicago	1.65	1.25	1.25	1.15@ 1.35
South and Southwest					
Big Seam lump	Birmingham	3.00	2.25	2.25	2.00@ 2.50
Big Seam mine run	Birmingham	1.60	1.75	1.80	1.60@ 2.00
Big Seam (washed)	Birmingham	1.85	1.85	1.85	1.75@ 2.00
S. E. Ky. block	Chicago	3.10	3.00	3.00	2.75@ 3.25
S. E. Ky. mine run	Chicago	1.60	1.95	1.95	1.85@ 2.10
S. E. Ky. block	Louisville	3.60	2.85	2.60	2.50@ 2.75
S. E. Ky. mine run	Louisville	1.55	1.60	1.60	*1.40@ 1.65*
S. E. Ky. screenings	Louisville	.90	1.25	1.20	1.10@ 1.35
S. E. Ky. block	Cincinnati	3.35	2.85	2.85	2.50@ 3.25
S. E. Ky. mine run	Cincinnati	1.55	1.60	1.60	1.50@ 1.75
S. E. Ky. screenings	Cincinnati	1.00	1.15	1.25	1.15@ 1.40
Kansas lump	Kansas City	5.00	4.35	4.50	4.50
Kansas mine run	Kansas City	3.25	3.00	3.00	*2.75@ 3.00*
Kansas screenings	Kansas City	2.35	2.40	2.40	2.35@ 2.50

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in **heavy type**; declines in *italics*.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

	Market Quoted	Freight Rates	Oct. 13, 1924 Independent	Oct. 13, 1924 Company	Oct. 5, 1925 Independent	Oct. 5, 1925 Company	Oct. 12, 1925† Independent	Oct. 12, 1925† Company
Broken	New York	$2.34		$8.00@$9.25		$8.20@$8.95		$8.20@$8.95
Broken	Philadelphia	2.39		9.15				
Egg	New York	2.34	$9.25@$9.75	8.75@ 9.25	$14.00@$15.00	8.65@ 8.90		8.65@ 8.90
Egg	Philadelphia	2.39	9.25@ 9.75	8.80@ 9.25				
Egg	Chicago*	5.06	8.17@ 8.27	8.14@ 8.20	9.50@10.00	8.03@ 8.28	$9.50@10.00	8.03@ 8.28
Stove	New York	2.34	10.00@10.50	8.75@ 9.50	14.00@15.00	9.15@ 9.40		9.15@ 9.40
Stove	Philadelphia	2.39	9.85@10.25	9.15@ 9.50				
Stove	Chicago*	5.06	8.63@ 8.75	8.50@ 8.64	10.00@11.00	8.48@ 8.80	10.00@11.00	8.48@ 8.80
Chestnut	New York	2.34	9.50@10.00	8.75@ 9.25	14.00@15.00	8.65@ 8.95		8.65@ 8.95
Chestnut	Philadelphia	2.39	9.65@10.00	9.15@ 9.25				
Chestnut	Chicago*	5.06	8.26@ 8.40	8.44@ 8.60	10.00@11.00	8.50@ 8.75	10.00@11.00	8.50@ 8.75
Pea	New York	2.22	5.25@ 5.50	5.50@ 6.00	6.50@ 7.00	5.00@ 6.00		**5.00@ 6.25**
Pea	Philadelphia	2.14	5.75@ 6.35	5.75@ 6.00		5.00@ 6.25		5.00@ 6.25
Pea	Chicago*	4.79	5.13@ 5.45	5.36@ 6.20	5.50@ 6.00	5.50@ 6.00	5.50@ 6.00	5.50@ 6.00
Buckwheat No. 1	New York	2.22	2.25@ 3.00	3.00@ 3.15	2.60@ 3.00	2.50@ 2.60		2.50@ 2.60
Buckwheat No 1	Philadelphia	2.14	2.50@ 3.00	3.00		2.50@ 2.60		2.50@ 2.60
Rice	New York	2.22	1.85@ 2.25	2.00@ 2.25		2.25		2.25
Rice	Philadelphia	2.14	2.00@ 2.25	2.25		2.25		2.25
Barley	New York	2.22	1.25@ 1.50	1.50		1.50		**2.25**
Barley	Philadelphia	2.14	1.50	1.50		1.50		1.50
Birdseye	New York	2.22	1.35@ 1.60	1.60		1.60		

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in *italics*.



Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

	1925			1924
	Oct. 12	Oct. 5	Sept. 28	Oct. 13
Index	175	175	176	174
Weighted average price	$2.11	$2.11	$2.13	$2.10

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

are "no bills" of all sizes every day at most mines, which get from two to four days a week with the usual exceptions. Prices in all these fields are unchanged since last week.

Colder weather has stimulated demand in St. Louis, principally for middle grade coals, although there is some activity in Carterville product. Anthracite, smokeless and coke are still slow. Country domestic shows a little improvement and will be a weather proposition. The report that buying is not up to normal is due to dealers not knowing that oil burners are going in at the rate from 100 to 150 a month in St. Louis. Country steam is quiet and local carload is fairly active. There has been a decided improvement in wagonload, which from now on will be fairly good. No change in prices.

Weakness Appears in Kentucky

Kentucky coal markets are weaker as a result of inability to absorb prepared coal in the face of the heavy offerings and abnormally mild autumn, which has retarded stocking by retailers and domestic consumers. Demand for steam coal continues active, and a lot of screenings as well as some steam nut, mine-run and egg is moving. But 4- and 6-in. block and large egg are not showing much. In western Kentucky production has eased off on prepared and screenings are firmer. In eastern Kentucky screenings are about the only thing that have held firmly.

There has been an accumulation of "no bill" cars at mines, resulting in shading and price cutting to get cars moving. This situation has been especially bad in western Kentucky.

Western Kentucky 6-in. block coal is weaker by 20c. a ton, at $1.65@$1.85; lump and egg, $1.45@$1.60; nut, $1.35@$1.50; mine-run (from small mines) as low as $1.10 and running up to $1.50 for best grades; screenings, 85c.@$1.10, including both pea and slack at up to $1 and nut and slack at $1@$1.10.

In eastern Kentucky best block is around $2.50@$2.75; lump, egg and nut, weaker, at $2@$2.25; mine-run $1.40@$1.65; weaker by 10c.; screenings firm, at $1.10@$1.35.

The utilities, gas plants and industries continue taking a lot of coal, principally screenings, with some mine-run. Brick and clay working plants, cement plants, steel and automotive industries are all busy and taking on fuel and railroad consumption is picking up, with crops starting more active movement.

Colder Weather Helps Northwest

Dock operators at the Head of the Lakes have had a good volume of business in the last ten days, orders coming from a wide territory and from commercial, industrial and domestic consumers. The late rush was due to colder weather over the Northwest.

Demand for Pocahontas and other smokeless is steadily increasing and the tonnage ordered by dealers over this territory is estimated to be 50 per cent larger than last year. Consumers show a greater disposition to order smokeless on account of the wide price spread between it and anthracite. Prices in both anthracite and bituminous are firm through the list, no changes being noted except that Pocahontas mine-run is up 25c. at $5.50. Shipments from the docks in September totaled 24,032 cars, as compared with 20,778 in August.

Receipts from Lake Erie ports in September were 968,658 tons of bituminous and 58,603 tons of anthracite. That brought bituminous receipts for the season up to 6,445,822 tons and anthracite to 786,848 tons. Hard coal receipts showed a falling off of 344,675 tons as compared with last year and bituminous receipts an increase of 1,334,244 tons. Thirty cargoes, all bituminous, were unloaded at the docks last week and 18 cargoes of bituminous coal were reported en route.

Supplies of anthracite on the docks now are estimated at 500,000 tons, of which more than half is held by one of the companies with docks at Duluth and Superior. Present supplies of anthracite are estimated to be ample to take care of the demand up till around Feb. 1 next.

Cold weather for a few days has served to start consumer demand in the Twin Cities at a faster pace. But steam buying is not following the weather to any extent, and buyers are in the market for as little as they can get along with. Those having water power, however, have not been able to make normal use of it because the dry season has kept down the head and the flour mills, after a prolonged period of dull business, are running heavier than for several years. The price situation is steady and fairly firm.

Kansas Has Rush Orders

A drop in temperature has brought a brisk business to the Southwestern district in prepared sizes of coal. The market over several weeks had been showing the normal seasonal increase, but on the second day of the recent cold snap dealers, their stocks rapidly dwindling, began to put in rush orders. Mines in Kansas are working more than 85 per cent of normal time and there are many more mines open this fall than in recent years. Unsettled conditions in Arkansas and Oklahoma, throwing to Kansas much business ordinarily controlled by those two states, is largely responsible. Screenings are dragging a bit behind the market for prepared sizes, but as yet there is no threat of an embarrassing surplus.

In the Colorado market there is a good demand for steam sizes and domestic lump, the call for anthracite being abnormal. In fact anthracite mines are working full time and orders are booked thirty to forty days ahead. Nut sizes over 1¼ in. and through a 3-in. screen are a drug on the market. The mines are operating about 85 per cent and production is on the increase. The operators are preparing to take care of increased demands. Prices are: Walsenburg lump, $5.50; nut, $4.50; Trinidad lump, $4.25; nut, $3.75; Crested Butte anthracite, baseburner size, $9.50; chestnut, $7; Dawson-Raton domestic lump, $4; fancy egg, $4; fancy nut, $3.75; fancy pea, $3.25; coke, baseburner size, $6.

The coal market in Utah is weaker again, due to warmer weather. This has helped the car situation, which is generally described as easier. Mines are operating a little better than 50 per cent of capacity. Prices continue steady and the labor situation is excellent. The sugar companies are entering the coal market in a more serious way and the metal mining and smelting industries continue to consume considerable coal.

Lake Movement Soars at Cincinnati

With 3,150 carloads of coal reported as en route to the lakes last week a new record was made for October. This was 555 more cars than the week before. Most of this is going at higher prices, egg and nut having risen to $2@$2.25. Current business has not changed much, but an outstanding feature of the market is the heavy volume of domestic coal booked for delivery in the last ten days of the month. It would appear that the free coal will be cut away down and the upturn of four or five weeks ago will be unescapable.

Heavier demand for egg is the feature of the smokeless market. Prices on this in some instances have been forced higher than lump. Where low-volatile lump has been obtainable at $4.25@$4.50, egg has taken on a price of $4.40@$4.75. Producers are watching to see the effect of the all-rail rate to New England which goes into effect Oct. 15. The demand for mine-run is just normal and for screenings it has fallen off just enough for the market to ease to $1.85@$2.

Immediate high-volatile business has been just "so-so," with supply easily taking care of demand. Some Hazard block eased as low as $2.50 and Elkhorns down to $2.65, but the general run of the market on the southeastern Kentucky stuff is $2.50@$2.75 with the specialized coals selling right on up to $3.25. Generally speaking, both this district and West Virginia have found it a little harder to keep mine-run moving and a slight concession was made on the steam, in that better grades could be had down around the minimum. Slack business for steam purposes continues strong.

With the river stage bettered tows are again coming down with deliveries as far south as Louisville. No change in the retail situation.

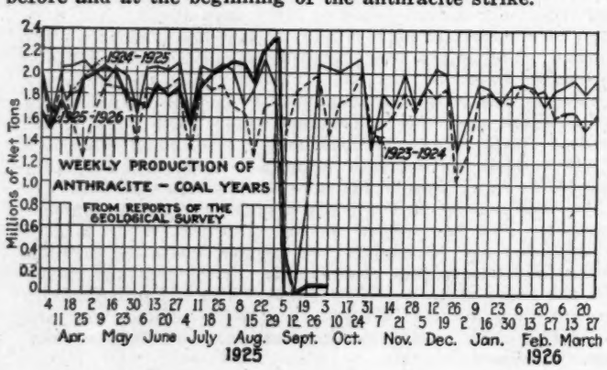
With slightly colder weather at Columbus there is more activity in the domestic coal trade. Retailers have been able to move a portion of their heavy stocks and this is reflected in business placed with jobbers and producers.

Steam business is still rather quiet although light increases in requisitions from some of the manufacturing establishments are reported. Contracting is not brisk as quite a few of the smaller users are content to buy on the open market. Most of the larger consumers, however, have closed agreements and prices are somewhat higher than the open market levels for steam sizes. Screenings are showing more strength due to some reduction in lump production several weeks back. Utilities and railroads are the larger users but other lines are taking large tonnages on contracts.

Production in the Ohio fields has not been quite as brisk as formerly, but the better demand for domestic sizes will soon be reflected on the output. In the southern Ohio fields the output is about 30 per cent of capacity.

Production in eastern Ohio is on the increase, figures just released showing that in the week ended Oct. 3 290,000 tons was mined. This is a little better than 41 per cent of potential capacity of the district and the largest weekly output this year. Increased operations are due in the main to late season lake shipping. Slack is quoted at $1.20@$1.25 f.o.b. eastern Ohio mines, and nut-and-slack, $1.25@$1.30, a weakening of 5@10c. per ton as compared with a week ago, because of abundance thereof.

The coal market in this section is unusually quiet for this time of the year so far as miscellaneous orders are concerned; industry continues a hand-to-mouth policy in buying, retailers are still loaded up with the stocks taken on before and at the beginning of the anthracite strike.



Since the arrival of cooler weather last week, certain plants have been putting in some fuel for heating purposes, but the volume on this account is small.

Pittsburgh Relatively Quiet

Last week in the Pittsburgh district coal market was relatively quiet. Trade on the whole is considerably more active than for months prior to August, but the change from an improving market has given sellers quite a disappointment.

The steel industry is maintaining the high operating rate reached in August and railroad movement has increased. Demand for domestic coal is fair, but not altogether up to expectations.

Market prices are not quotably changed but possibly are a shade easier in spots. However, steam slack, which is subject to the depressing influence of more shipments of domestic lump, has not declined particularly, and that is easily the most sensitive line in the matter of prices.

The trend of production in the central Pennsylvania field is still upward, but the increase is not what might be expected under existing conditions. Gains are being made in the Broad Top region, where a number of the leading operations are almost on a normal running basis. About 400 mines in the entire district are still idle. The demand is stiffening, however, particularly for prepared sizes for domestic consumption in the Eastern states.

Not much change is discernible in the Buffalo soft-coal market, except that prices are weaker than they were when the hard-coal strike began. Slack is hard to get rid of and if there were not some interest in coke and smokeless coal the trade would be slow indeed.

Trade Lags in New England Market

In New England the steam coal market shows no improvement. Buyers are quite indifferent, and the agencies are again canvassing in every direction to place spot coal. Coastwise movement is only fair, being restricted largely to shipments on contract, and accumulations at Hampton Roads continue heavy enough to make difficult anything like stable prices. The range therefore is from $4.65 to $4.90 per gross ton f.o.b. vessel at Norfolk and Newport News, with indications that the level will drop another notch during the current week.

On cars Boston and Providence also there is only moderate inquiry. While some factors are holding for $6.25@$6.40 others are selling at $6 and even less. A few rehandlers are now being pressed to take deliveries from Hampton Roads to such an extent that they are obliged to send coal inland to make room. Boston retail prices to the steam trade are now $8 per net ton, having been advanced from $7.50, but this is because of a situation purely local and does not reflect any improvement in demand. It means simply that the retailers are trying to recoup their losses of the summer months.

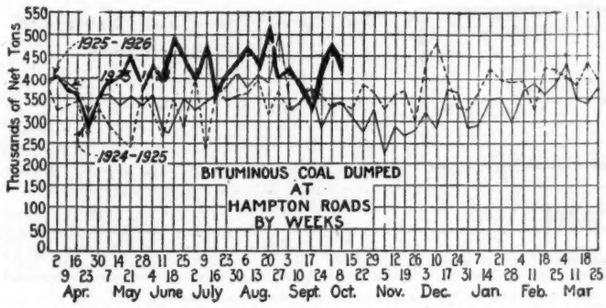
The absence thus far of any cold weather has very much relieved the pressure on retail dealers in anthracite. There is more and more talk of substitutes, and numbers of Pennsylvania operators are profiting by the moderate current demand for screened coal. Minimum prices for lump and egg are somewhat higher than last week, there being very little now offered at less than $4 per net ton at the mines.

Trade Easy at New York

The bituminous coal market at New York remains practically unchanged from last week. Output is moving in fair shape, with the better coals in good demand, some operators reporting heavy bookings. Prices, however, continue on the old basis.

Soft coal dealers do not expect a big demand in this territory for prepared soft coals to take the place of anthracite users, the trend being toward coke. Increased buying usually attendant upon the approach of winter has been absent so far, although industrial consumers are taking the opportunity of adding small tonnages to their reserve stocks.

Local houses quote Preston County coals at $1.45@$1.50; some grades of Somerset County coals as high as $1.85, and Indiana County coal (Pool 15) at $1.70@$2.25. Stocks at the local piers have not been heavy and free coals move easily.



The Philadelphia market is disappointing to shippers, as cooler weather has made but little change in the situation. Producers of hard-structured coals are going strongly after the anthracite market, but not much progress has been made in inducing dealers to take in soft coal. In this section coke is first tried in an emergency and soft coal comes later.

Spot buyers are taking only ordinary quantities, but contract coal is moving in good volume to add to stocks. Prices remain unchanged and there is no immediate prospect for an increase.

At Baltimore the coal supply continues in excess of demand. Surpluses at tide are noted, and purchasers, knowing that competition is keen, play one supply point against another in order to get minimum quotations. Industrial demand continues light, and prices even for better grade coals are the football of an over-keen salesmanship. Contracting is not on a general scale, as many purchasers continue in the open market in carrying out a hand-to-mouth supply policy. The export situation is fluctuating and uncertain.

There has been no change of note in market conditions at Birmingham during the past week. Comparatively little domestic coal is being bought in the open market and hold-up orders are largely delaying movement against contracts. While there has been some moderation in the heat wave, midsummer temperatures still prevail and there has not been sufficient rainfall to have any material effect in breaking the drought.

Steam coal is being bought fairly well, there being a good demand for high grades of mine-run and washed from the Cahaba and Warrior fields. The volume of spot business being placed along with contract commitments is enabling the mines to operate from three to six days per week in the commercial field. The ice season is holding up to the peak longer than usual, while oil mills, cement plants and ginneries are running full time and requiring a good aggregate tonnage. Some of the rail lines are taking slightly above the minimum contract figure, but, generally speaking, there has been little fuel placed in reserve by year-around industrial plants and utilities as yet. There is no material change in the bunker situation.

Quotations are without change and within the range last quoted on the different grades.

Demand for foundry coke is about keeping pace with output, beehive being quoted at $5 per ton and byproduct 4.75 per ton ovens. Domestic sizes are in fair demand at $3.50@$3.75 for nut and $4@$4.25 per ton ovens for egg.

Domestic Hard Coals Dwindle

New York anthracite users are not yet complaining of the lack of their favorite sizes. Supplies are dwindling rapidly, however, and retail dealers are already looking after their supply of substitutes. So far the preference seems to be for coke, which is in heavy demand, some manufacturers reporting heavy bookings through November.

There has been comparatively little call for screened bituminous coal, which had a good demand here during the last strike in the anthracite fields.

Domestic coals are practically out of the market so far as operators are concerned. Several loaded boats of egg, stove and chestnut are still available for those willing to pay the prices quoted, which range as high as $22.50 alongside. Stock pea coal was heard quoted at $8@$9 f.o.b. mine and $11@$13 alongside. Buckwheat No. 1 was quoted at $2.60 @$2.85. Rice and barley were not quotable.

Egg, stove and nut sizes of byproduct coke were quoted at $7.50@$8 and run-of-oven furnace at $6.50@$7.

Some Philadelphia retail coal yards present a rather bare appearance, few having anything but pea coal. Of this the supply is good and shipments from the leading company shipper continue to roll along in moderate volume to regular customers.

All dealers have numerous calls for the larger sizes and when pea is offered as the only available fuel, the would-be purchaser frequently declines to take it, but the number who ultimately come back is increasing.

Dealers have been offered stove at $16, nut at $15, and pea at $9.50 per ton, the understanding being that this is coal stored by a small producer near Sunbury, Pa. To make it profitable dealers would have to sell the stove and nut at close to $20 retail, and it is doubtful if any has been sold. The demand for coke is good and prices are advancing.

Demand for buckwheat is increasing, although there is no rush for it. This is the only steam size on the market.

Baltimore consumers are cutting into the supply to some extent, although there is no rush for fuel. Dealers have been advising customers in many cases not to take more anthracite than for immediate needs. The president of the Baltimore Coal Exchange also made a public announcement that he saw no grave danger in the situation to householders, as, even if the supply of anthracite ran out here, there would be no difficulty in getting high-grade soft coal, which could be burned in the majority of heating apparatus in this city.

At Buffalo a little anthracite above pea size is to be had, but the customer has to put up a pretty strong plea to get any and some companies are running short of pea.

Meanwhile coke runs up in price, with different quotations in every office. The sale of smokeless has not run up very fast yet, but that is merely because the people do not know how to use it. When they do there is going to be a sharp competition between it and anthracite.

Connellsville Coke Trade Gains Slightly

The turnover in furnace coke at Connellsville has undergone an increase in the past ten days, after a marked lull. The market is not yet nearly as active as might have been expected from the little rush of buying recently, which came so early as to lead to expectations that when the anthracite suspension had lasted a few weeks coke would be in heavy demand.

Eastern makers of water gas, who bought in August for short periods, have not been buying lately, but are expected to be in the market again within a few weeks. Their buying amounts to more than that of dealers expecting to distribute for house consumption. There has been a fair amount of this buying in the past week.

One steel company, which does not usually buy coke, has purchased some prompt coke, presumably for a reserve, and is said to have paid up to $4, though several weeks ago some operators said the market was already $4 and ready to go higher.

Miscellaneous lots, which a fortnight ago could sometimes be picked up at as low as $3.50, are now going at $3.65@$4, depending on quality and, it would seem, also on the information the purchaser has as to what he ought to pay. The spot market thus shows quite a range.

There are reports that one or two operators are holding coke on track for a further advance. If they have guessed wrong this may cause a reaction.

The regular crushed coke having become well sold up some time ago, with asking prices shoved up to $7, several operators are undertaking to crush coke by manual labor, using sledges, etc., producing material of doubtful quality.

Spot foundry coke remains dull, and therefore quotably unchanged at $4@$4.50. Lately there has been a little loaded on track. Foundry coke, being large, is particularly unsuited to heating use. Labor troubles in the region are on the wane.

Car Loadings, Surplusages and Shortages

	Cars Loaded	
	All Cars	Coal Cars
Week ended Sept. 26, 1925	1,120,645	178,463
Previous week	1,098,428	171,601
Week ended Sept. 27, 1924	1,087,954	162,726

	Surplus Cars		Car Shortage	
	All Cars	Coal Cars		
Sept. 30, 1925	140,842	61,370	.....	.....
Sept. 22, 1925	150,453	63,320	.....	.....
Sept. 30, 1924	116,689	58,375	.....	.....

Foreign Market And Export News

British Coal Market Disappoints But Trade Is Hopeful

Although prospects in the Welsh steam coal trade were a little more favorable for orders at the beginning of the week, the slight improvement anticipated was not realized. With enormous quantities of coal standing, exceptionally stormy weather prevented steamers from reaching port without much delay, and this has hampered prompt shipment. Colliery owners offer concessions to buyers to take quick delivery, but with the supply of ready tonnage limited it is almost impossible for buyers to take advantage of opportunities of this kind. Several producers have decided to close down small collieries. Negotiations for the reopening of the Clydach Vale Collieries are expected to begin soon.

There has been a very small upturn in the Newcastle coal trade. Inquiry from the Continent has broadened considerably, though actual business is slow to mature. The better classes of Durham coal are a little steadier, although the inferior classes of coking and bunkering are still offered rather freely. Washed smalls and sized coals continue in fairly good request. On the whole the outlook is regarded as a little more cheerful. The fall in prices seems to have been arrested and the collieries refuse to make further concessions. With the colder weather and the longer nights setting in the demand for gas and house coal is expected soon.

Production of coal by British mines during the week ended Sept. 26, according to a special cable to *Coal Age*, totaled 4,395,000 gross tons, compared with 4,435,000 tons in the previous week.

Coal exports from Great Britain in August, 1925, totaled 3,272,110 gross tons, valued at £3,159,952 as compared with 5,074,744 tons valued at £5,732,629 in August, 1924. For the eight months ended Aug. 31, 1925, the total is 33,562,809 gross tons, valued at £34,537,380 as compared with 41,693,690 tons, valued at £50,099,242, for 1924 and 53,156,546 tons, valued at £67,571,441, for 1923.

French Industrial Demand Easy; Domestic Call Gains

Demand in the French coal market remains moderate for industrial fuels but is gaining for household grades. Bituminous large coals are more sought, especially by Belgian consumers in the neighborhood of the frontier.

Last week several cargoes of Welsh anthracite were received at Rouen. The Soviet commercial delegation were asked whether they intended to continue shipments of anthracite to France. They answered that all depended upon their ability to obtain sufficient orders from French importers and merchants, and added that they were prepared to increase their tonnage in that event.

Like every other year when autumn sets in, there is an increasing scarcity of empty trucks, and barges are far from plentiful. The freight rate for coal from Bethune to Paris has risen to 26 fr.

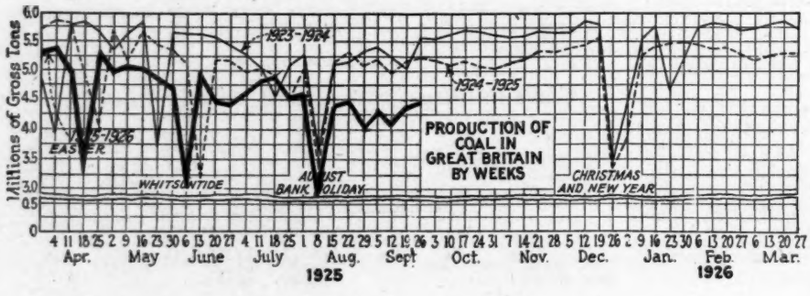
During the first twelve days of September France received from the Ruhr 254,900 tons of indemnity fuels, including 146,400 tons of coal, 97,400 tons of coke, and 11,100 tons of lignite briquets, a daily average of about 21,250 tons. During the first twenty-one days of September the O. R. C. A. received from the Ruhr 154,673 tons of coke, a daily average of 7,400 tons.

Competition and Iron Strike Hamper Belgian Trade

There is really no change in the situation in the Belgian market. The iron works strike is still on and continues to affect the consumption of industrial coals, already none too good, and, notwithstanding the exchange rate, foreign competition is unabated.

Full-sized briquets continue to be in rather poor request.

Domestic fuels, on the contrary are extremely firm. Anthracite in particular, is rising steadily and is quoted at the Brussels Bourse 5 fr. above the price of last week. All other domestic grades, as well as ovoids, are enjoying the same favor. Foreign demand in domestic fuels is active at firm prices.



Movement Slow and Scattered At Hampton Roads

Movement at Hampton Roads was slack last week, the slow-down of the Western market having had a similar effect on New England shipments. Many mines serving this port, which took on big activity a month ago, again are down to a three-day schedule.

Scattered foreign shipments have been recorded and bunker trade is holding its own.

Export Clearances, Week Ended Oct. 10, 1925

FROM HAMPTON ROADS

	Tons
For Newfoundland:	
Nor. Str. Certo, for St. Johns	3,225
For New Brunswick:	
Nor. Str. Landvard, for St. John	4,285
Br. Schr. Cutty Sark, for St. John	981
For Brazil:	
Br. Str. Dovenby Hall, for Santos	5,777
For Cuba:	
Amer. Schr. Thann, for Cay Frances	3,207
Dan. Str. Nordstjernen, for Havana	3,450
Dan. Str. Jelling, for Havana	3,006
For Argentina:	
Br. Str. Blythmoor, for Buenos Aires	8,830
For Canada:	
Br. Str. Poliki, for Montreal	2,025
For Porto Rico:	
Amer. Str. Isabela, for San Juan	4,012
For Nova Scotia:	
Br. Schr. Coral Spray, for Lockeport	131
For Peru:	
Br. Str. Dunstaffnage, for Callao	2,973

FROM BALTIMORE

For Italy:	
Ital. Str. Valtellina, for Civita Vecchici	7,695

Hampton Roads Pier Situation

(Gross Tons)

	Oct. 1	Oct. 8
N. & W. Piers, Lamberts Pt.:		
Cars on hand	1,841	1,537
Tons on hand	113,938	94,851
Tons dumped for week	162,229	135,199
Tonnage waiting	15,000	5,000
Virginian Piers, Sewalls Pt.:		
Cars on hand	1,370	1,569
Tons on hand	107,600	123,200
Tons dumped for week	95,558	81,235
Tonnage waiting	3,682	6,000
C. & O. Piers, Newport News:		
Cars on hand	2,990	2,539
Tons on hand	151,610	119,845
Tons dumped for week	152,031	162,431
Tonnage waiting	17,940	3,515

Pier and Bunker Prices, Gross Tons

PIERS

	Oct. 3	Oct. 10*
Pool 1, New York	$5.35@$5.60	$5.35@$5.60
Pool 9, New York	5.00@ 5.25	5.00@ 5.25
Pool 10, New York	4.75@ 5.00	4.75@ 5.00
Pool 11, New York	4.45@ 4.70	4.45@ 4.70
Pool 9, Philadelphia	4.85@ 5.05	4.85@ 5.05
Pool 10, Philadelphia	4.55@ 4.75	4.55@ 4.75
Pool 11, Philadelphia	4.35@ 4.55	4.35@ 4.55
Pool 1, Hamp. Roads	5.00	**5.00@ 5.15**
Pool 2, Hamp. Roads	4.65	**4.65@ 4.85**
Pools 5-6-7, Hamp. Rds.	4.50	4.50

BUNKERS

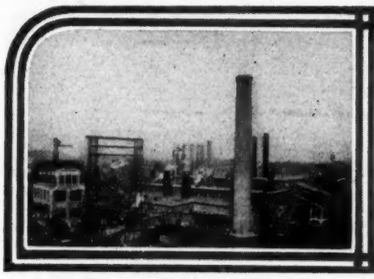
Pool 1, New York	$5.60@$5.80	**$5.60@$5.85**
Pool 9, New York	5.25@ 5.50	5.25@ 5.50
Pool 10, New York	5.00@ 5.25	5.00@ 5.25
Pool 11, New York	4.70@ 4.95	4.70@ 4.95
Pool 9, Philadelphia	5.05@ 5.25	5.05@ 5.25
Pool 10, Philadelphia	4.75@ 4.85	4.75@ 4.85
Pool 11, Philadelphia	4.60@ 4.75	4.60@ 4.75
Pool 1, Hamp. Roads	5.10	*5.00@ 5.15*
Pool 2, Hamp. Roads	4.75	4.65@ 4.85
Pools 5-6-7, Hamp. Rds.	4.60	4.60

Current Quotations British Coal f.o.b. Port, Gross Tons

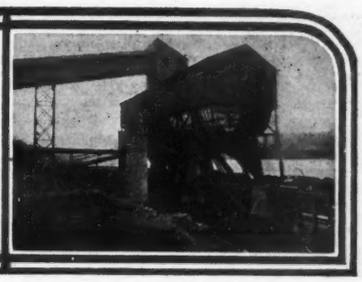
Quotations by Cable to *Coal Age*

	Oct. 3	Oct. 10*
Cardiff:		
Admiralty, large	24s.	*23s.6d.@24s.*
Steam smalls	11s.3d.	*10s.@10s.3d.*
Newcastle:		
Best steams	16s.6d.	*15s.@16s.6d.*
Best gas	16s.6d.	16s.6d.
Best bunkers	15s.@15s.6d.	*14s.6d.@15s.*

* Advances over previous week shown in **heavy type**; declines in *italics*.



News Items From Field and Trade



ALABAMA

The Montevallo Coal Mining Co. is planning extensive improvements in its plant facilities at Aldrich Mines, in Shelby County, a large steel washery and tipple being under consideration, in which will be installed the most modern machinery and equipment for handling and preparation. An 800-hp. electric hoist is now in process of installation, which will take the place of the steam engine in use at present. A substation has been provided at Aldrich by the Alabama Power Co., which will provide ample power facilities for the operation of the electrical equipment to be added. The mines are now operating at capacity on full-time schedule.

ARKANSAS

Samples of coal are being collected from all the working mines in the State by N. T. Bourke, research engineer with the University of Arkansas engineering experiment station, so that the Arkansas coals may be analyzed, the heat content computed, the sulphur determination made and the fusing point of the ash found. There are approximately 100 working mines in the state.

COLORADO

John Riffey has acquired an interest in the Valley View coal mine, Mancos, hitherto owned and operated by Karl Hauert. The owners are putting in a 600-ft. tram to convey the coal from the mine to wagon road on the lower level. They also are taking steps to put in a fan and ventilating system and to hire the necessary mine foreman in compliance with the new law regulating the operation of coal mines.

ILLINOIS

The Illinois Miners' Examining Board will hold examinations at Johnston City, Oct. 15; West Frankfort, Oct. 16, and Duquoin, Oct. 17.

Decreased coal production, unemployment among miners and idle equipment are pictured by the annual coal report of the State Department of Mines and Minerals for the year ending June 30. With an output of 66,144,361 tons, Illinois mines fell 6,164,304 tons short of last year's total. The mines employed 81,605 men this year, a decrease of 18,160 from the previous year. Only 898 mines were operative during the last year, a loss of 134. District No. 10, with a gain of 1,065,111 tons, was the only one showing an increase in production.

Announcement has been made by the Saline County Coal Corporation that its big Harco mine will resume operations at once after several months of idleness. The shaft employs 750 men and is one of the largest in the Harrisburg district.

The Worthuskey Coal Co., operating near Cambria, south of Duquoin, has resumed operations.

The Ward coal mine, at DeSoto, which has been idle for nearly two years, has been sold to a company which will handle its output to the Illinois Steel Co. Preparations are being made to put the mine in working condition. Practically all of the homes destroyed at DeSoto in the great cyclone last March have been rebuilt.

With less than two fatalities for each million tons mined during the year ending June 30, Illinois now leads all the states in the Union for safety in coal mining operations. The annual report of the state department of mines and minerals says only 117 fatalities were reported during the year in coal mines. Falls of roofs and sides took the heaviest toll, killing 57 miners, and accidents in the handling of pit cars and motors came next with a grist of 30 lives. Electricity caused ten deaths and explosives nine.

The Coal Mine Service Co., 307 North Michigan Avenue, Chicago, was incorporated in Illinois recently to supervise, superintend and act in an advisory or directing capacity in connection with the operation of coal mines and by-products plants. The capital is $10,000. The incorporators are D. Harold Davis, John M. Tueby and M. Hayes Kennedy.

After being closed since early last spring the Brewerton Coal Co., Lincoln, opened for operation late in September. The decision to open came following a conference between the pit committee of the local and the officials of the mine. Immediately following the conference the seals were broken and the fans started for the clean-up.

The properties of the St. Louis Coke & Iron Co., at Granite City, will be offered for sale Oct. 20 by Special Master in Chancery Edward P. Allen to end the receivership of the company and pave the way for its reorganization. The company was organized by financial interests largely identified with the National Enameling & Stamping Co., headed by George W. Niedringhaus, to manufacture coke from bituminous coal from the southern Illinois fields under a new process. The original organization was the St. Louis Coke & Chemical Co., but the name was later changed to the present one. The company's properties are valued at $12,000,000 and the plans for reorganization contemplate $3,000,000 in improvements and enlarging the plant. It is understood that the bondholders will bid in the property when it is offered for sale.

Charles Sulski, Spring Valley, has been appointed county mine inspector of Bureau County. Mr. Sulski was mine manager at No. 1 mine of the Spring Valley Coal Co. until that mine was abandoned last May.

INDIANA

A heavy slate fall in Binkley Mine No. 3, south of Jacksonville, Oct. 1, killed four men and seriously injured two others.

The Sunlight Coal Co., owning extensive strip mines near Boonville, is working to its full capacity as are the Enos and Gray strip mines of Oakland City.

Among mines which have reopened recently are Somerville No. 2, at Somerville, where the management has promised miners steady employment for an extended period: Fork Ridge mine, near Oakland City, which was closed four years ago. The Pike County Coal Co. mine No. 3, at Petersburg opened Oct. 1 with a full force of men. The mine has a capacity of 900 tons and normally employs 100 men. No. 1 mine, owned by the same company and the largest in Indiana south of the B & O. R.R., has been in operation since Aug. 1, employing a force of 475 men.

Announcement has been made that Jackson Hill mine No. 6, in the Terre Haute field, has resumed operations. The mine has been down for several months and about 300 miners were put to work.

A campaign to induce manufacturers, business men and citizens generally to use Indiana coal has been inaugurated at Brazil. Officials of the United Mine Workers of Indiana plan to begin a statewide campaign to have residents of the state to use coal mined in Indiana. Ora Gasaway, board member of the union, told a meeting of business men at Brazil that they had been preaching to miners to trade at home and that the miners now ask them to trade at home and start by using Indiana coal. A slogan "Trade at Home by Using Indiana Coal" was proposed by him. He will go before the Indiana State Chamber of Commerce in his first step to start a state campaign.

Sale of approximately 6,117 acres of

coal lands in Sullivan County to the Connery Coal & Investment Co., of Chicago, Ill., has just been announced by the law firm of Hays & Hays, of Sullivan, who acted as agents for the Indiana Coal Co. and R. R. Hammond, of Chicago, in the deal. The consideration was not given. Hinkle C. Hays, of the law firm which acted as attorneys for both buyer and sellers in the deal, said that no time had been fixed for opening of the new property, but that it was certain that the sale presaged additional coal mines in Sullivan County.

Miami mine No. 6, in the Clinton field, was closed recently for an indefinite period. Another mine operated by this company in the same field will be continued in operation. This company's business virtually is all railroad business and can be handled by the one mine. Mine No. 6 is said to be nearly worked out.

KANSAS

One hundred and twenty-five miners employed at No. 21 mine, near Scammon, leased from the Western Coal & Mining Co., and 150 employed at No. 18 of the Clemens Coal Co., four miles west of Pittsburg, went on strike Oct. 5. At both mines the cause assigned was that the companies have increased the charge for explosives and supplies, notably raising the price of fuse from 40 or 45c. to 70c. The miners contend that no greater charge should be made than prior to the signing of the Jacksonville agreement. Matt L. Walters, president of District 14, United Mine Workers, stated that the strike has the approval of the district executive board.

The strike at Mine No. 2 of the Young Coal Co., near Weir, which had lasted five months, was ended Oct. 3 by agreement between the operator and the miners' union. The cause of the strike was the allegation of the union that the company advanced new men ahead of their turn on the waiting list.

James Sherwood, state mine inspector of Kansas, has issued a warning to all coal operators in the state to take special precautions against explosions. Atmospheric conditions augment the natural hazard of dusty mines at this season, Mr. Sherwood said, and strongly urged wetting down the dust.

The Sheridan Coal Co. has leased its mine No. 18, near Arma, to Andrew Gaslein, of Arma, E. M. Roberts, Sr., superintendent of the Sheridan, announces. The mine, which has been idle since February, will have to be cleaned and extensive repairs made before production is resumed. Throughout most of last winter this mine employed 200 men. Mr. Roberts stated that mine No. 20, in the northern part of Crawford County will be leased soon if the coal market continues to show improvement. Several prospective lessees are negotiating for the mine. Having been sunk in recent years, the mine is capable of one of the largest productions in the district, but has not yet been developed to that point. This mine is located on a 1,000-acre tract on which the coal is said to be of good quality and thickness.

The Colored Section of a Southern Mining Town

Contrast the appearance of this street in Edgewater, Ala., with the negro section in many a Southern community of 25 or 30 years ago and it is easy to understand the present urban trend of the colored man. Like anyone else the negro will seek the place where conditions in general are most nearly to his liking. And logically he prefers such dwellings and other surroundings as are here depicted to the back-alley abodes which have long been considered as his natural habitat.

The Domestic Fuel Co.'s mine No. 3, near Gross, has been leased to the George T. McGrath Coal Co., which is speeding up repairs on the property preparatory to operating. This shaft has not been worked since the World War and is practically unexploited. Labor and market conditions caused it to be shut down soon after the shaft was sunk.

Negotiations are under way for the lease by the Central Coal & Coke Co. of its mine No. 49, near Frontenac, to Mark Knott and Frank Cumiskey, both of Pittsburgh. The mine, one of the largest in the district, employing normally between 300 and 350 men, has been idle since the general strike of three years ago. In the meantime its smokestacks have been blown down and other damage of unknown extent has resulted. A smokestack now is being built to permit the operation of fans to rid the shaft of gas. As soon as it is considered safe to venture into the mine an inspection will be made which will determine the lease.

KENTUCKY

At Madisonville, preparations are being rushed for the opening of the Rich Coal Co. mine No. 11, which, when completed, will have a daily capacity of 1,000 tons. Northern and Middle-Western railroads are reported as furnishing the largest market for coal mined in that vicinity.

With the fall elections drawing close more and more is being heard regarding the proposed legislation featuring a coal tonnage tax in Kentucky during the 1926 legislative session starting in January.

After a long argument for better passenger train service in the Hazard district, on the Eastern Kentucky Division of the Louisville & Nashville R.R., in which coal operators were quite active, the road has agreed to give better service on the First Creek and Lotts Creek branches, and between McRoberts and Hazard. Heretofore much time was lost by sidetracking the passengers for coal trains and running mixed freight and passenger trains, which meant that operators from Cincinnati, Louisville, Lexington and other points were subjected to delay and inconvenience in efforts to visit their mine properties.

The Hatfield-Reliance Coal Co. has been busy in having the mine plant of the Mitchell-Willis Coal Co., at Gorman, on First Creek, cleaned up and placed in condition to start operations after a long shutdown. The Adkins mines, at Dakota, and Alex McIntyre mines at Fusonia also are getting ready to resume.

The Cornett Lewis Coal Co., Harlan Collieries Co., Kentucky Cardinal Coal Co., Creech Coal Co., Harlan Wallins Coal Corporation and R. C. Tway Coal Co. recently answered a call sent out by H. A. Robinson, field representative of the Kentucky Childrens' Home, at Lyndon, for fuel supplies. Each of these companies donated a car of eastern Kentucky coal.

It is reported from the Elkhorn and Hazard fields of Eastern Kentucky that the Kentucky & West Virginia Power Co. is enlarging its transmission lines in that district to reach more mines and give better service in the Kentucky coal fields. Considerable improvement is under way also in West Virginia, connecting into the Charleston, Logan and other districts and with some points in Southern Ohio. The company is operating a large central power plant at Lothair, near Hazard, and is furnishing about 90 per cent of the mine power in the Hazard and Elkhorn fields. The company recently entered a contract to furnish power to the Consolidation Coal Co. plants, which will add considerably to its output. Connections have recently been made to a power plant at Betsey Lane, in Pike County; Appalachian Power Co., at Bluefield, W. Va., and Norton, Va., so that surplus power can be transferred from one section to another.

Ray Moss, of Whitesburg, when in Cincinnati recently, confirmed the report that he had purchased the holdings of the White Star Coal Co., operated by the Detroit City Gas Co. at Wilhoit. These properties were taken over during war times at a figure said to be in the neighborhood of $450,000. Though the repurchase price was not disclosed it is said to have been considerably less than the former transaction involved.

A. L. Allais, president of the Columbus Mining Co., of Chicago, at the late September term of the Perry County

Court was appointed receiver for the Montgomery Coal Co., at Vicco. It is understood that the liabilities causing the receivership amount to $53,000 while the mines are valued at four times that amount. Mr. Allais is receiver also for the Daniel Boone Mines, also in the Hazard district.

Under the direction of J. S. Oldham, of Whitesburg, the new owners of the Mitchell Willis Coal Co., on First Creek, near Typo, have cleaned up the company's mines and resumed operation. These properties were obtained from the Hatfield Reliance Coal Co., of Cincinnati, and the work of putting them in shape for operation required four months. A new name will be used by the corporation.

MINNESOTA

Formal notice has been served upon the railroads of Minneapolis that the city ordinance against the use of soft coal other than smokeless in switching engines will be enforced hereafter. The ordinance was passed in 1909 and was upheld as constitutional by the State Supreme Court in 1911. It declares the use of other soft coal to be a nuisance and carries a fine of $25 to $100 for violation.

The Superior coal dock at Duluth, operated by the Henry Ford interests, is now nearly full of Kentucky coal, which is still being handled on this market through the auto sales agency. The company has taken steps to obtain ownership of the Duluth dock through bond foreclosure proceedings and after title has been obtained it is understood that steps will be taken to increase the coal handling and storage capacity of the dock in addition to providing handling facilities for autos and auto parts.

MISSOURI

A. M. Boudinier has just installed a new coal shed, scales and office building to be used in the operation of a coal mine at Perry.

A new mine has been opened at Crescent Lake and coal is being taken out. The mine is owned by the Fair Play Mining & Development Co. The coal was found at a depth of about 200 ft. and the bed is about 26 in. thick and said to be of good quality. Mining operations are being pushed and just as fast as the excavation is enlarged men will be added to the working force.

NEW YORK

In connection with the application of Burns Bros. to list on the New York Stock Exchange 16,421 additional shares of Class A common stock and 16,427 shares of Class B common stock, it was reported that the proceeds from these issues is to pay for Steamship Fuel Corporation and the Wyoming Valley Coal Co. and subsidiaries, recently acquired from S. A. Wertheim.

OHIO

The tipple at the Fort Pitt mine of the Central Coal Co., operating at Dillies, opposite Moundsville, W. Va., was destroyed by fire last week, entailing a loss estimated at $30,000, partly covered by insurance. According to A. H. Smitherman, superintendent of the company, the mine has been closed down for some time and the cause of the fire is therefore unknown.

David Watkins, of Buffalo, Ohio, was named Oct. 1 to succeed William Roy, Bellaire, as vice-president of the Ohio Mine Workers' union. Watkins was nominated by Lee Hall, president of the union, and the executive committee approved the nomination. Roy recently resigned.

Coal is being mined in the Vulcan Coal Co.'s mine at Pomeroy on a cooperative basis. Coal will be shipped in the current week. Prior to its shutdown because of the Jacksonville agreement it empolyed 350 men. A number of Pittsburghers own the mine.

A meeting in connection with the old Interstate Coal & Dock Co.'s financial affairs, which have been more or less involved since a receivership four or five years ago, was held in the Business Men's Club in Cincinnati on Oct. 2. Present were C. H. Mead, of the Mead Coal Co., of Beckley, W. Va.; M. M. Tyree, of Huntington, W. Va., and J. A. Teegarten, of the Low Volatile Coal Co. of Columbus, and others from the east. What further steps were taken or what plans were outlined were not made public.

Reports from the four mines of the Pittsburgh Coal Co. in the Pomeroy field operating under the 1917 wage scale show that output is increasing rapidly. About 500 men are employed at the four openings and production is in excess of 8,000 tons weekly.

The international office of the United Mine Workers has revoked the union charter of the local at Bellaire. Two unauthorized strikes at the Franklin mine of the Cleveland & Western Coal Co., at Stewartsville, within four days led to the action. The same coal company has started up its Johnson mine.

The Webb mine of the Cambria Collieries Co., Shadyside, resumed operations Oct. 1 after being idle for two years. Seven hundred and fifty men are employed at the plant. United Mine Workers officials were informed by the company that operations are expected to be continued at capacity throughout the winter. Announcement was made that 200 men have been added to the force of the Elm Grove Coal Co. mines, also operated under union scale.

Because of changes made in their Sullivan-Pond Creek holdings the Corey Mann George Co., of New York City, has decided to discontinue its Cincinnati offices as of Nov. 1, according to notices sent to Frank and Ed. Holyoke, in charge there.

A deed containing 39,200 words, but lacking internal revenue stamps to indicate the value, has been filed at St. Clairsville, covering transfer of several thousand acres of coal land in Washington and Wayne townships, Belmont County, by S. H. Robbins, Cleveland coal operator, to the Cleveland Trust Co. The consideration is given as $10.

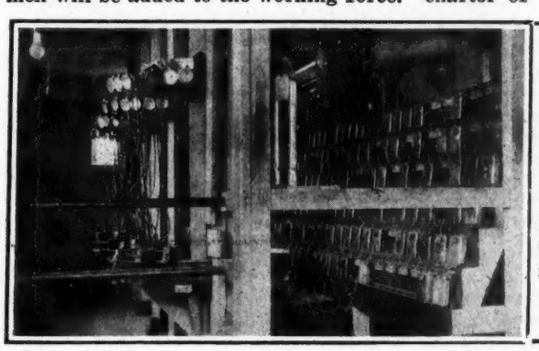
PENNSYLVANIA

The first violence in the anthracite strike was reported Sept. 29 in the dynamiting of the pump house at the Quinn mine in Dunmore. The blast caused a loss of $3,000. Blame has not been fixed.

An increase of three mines shipping by rail is shown in the operations of the Pittsburgh district during the week ended Sept. 26. There were 75 mines working which produced a total of 316,479 tons of coal, compared with 290,395 tons in the preceding week. The Pittsburgh Coal Producers' Association reports production of 15 mines out of 78 for that week as 74,388 tons, which is 12.2 per cent of capacity. This figure compares with 10.1 per cent in the preceding week and 40.5 per cent in the corresponding week last year.

A new steam tipple is being put in at the Adrian mine of the Rochester & Pittsburgh Coal & Iron Co., now operated by the Jefferson & Indiana Coal Co., which will much increase its handling capacity.

At a meeting of the Central Pennsylvania Coal Producers' Association directors and the board of managers of the Bituminous Coal Operators' Association held in the headquarters of both concerns in Altoona, Pa., on Sept. 29, an answer to the recent inquiry of John Hays Hammond relative to prepared sizes of bituminous coal for use in New England states was prepared and sent. The reply signed by Charles O'Neill, secretary, stated that the district was ready to supply the New England States with 1,106,917 tons of prepared sizes monthly, the mine-run capacity being 5,420,000 tons per month.



This Lamp Rack Saves Time and Steps

At Dawson, N. M., the Phelps Dodge Corp. has worked out this arrangement of revolving hangers in front of the charging racks. Thus the clerk brings every man's lamp to hand readily.

UTAH

A local mining engineer named J. B. Jensen has completed a process that he believes will make Utah coal smokeless. Experiments were begun years ago. The process is to be exploited by a company which is being formed. A plant is already under consideration for the preparation of coal for the local market. Mr. Jensen says that at a cost not to exceed 30c. a ton Utah coal can be made smokeless without detracting from its fuel properties.

Miles L. Jones, prominent Ogden coal retailer and former city commissioner, is running for office again this fall.

WEST VIRGINIA

Brooks S. Hutchinson, of Fairmont, vice-president of the West Virginia Coal & Coke Co., announced Oct. 7 that M. Benton Mitchell, formerly Marion division superintendent of the Bethlehem Mines Corporation, in charge of the Barrackville and Dakota mines, had joined the operating forces of that concern. Mr. Mitchell will be located outside of Fairmont, although no definite announcement is made as to his location or position with the concern, which has mines in 12 counties in northern West Virginia and four divisions—the Kanawha, Logan, Elkins and Bower. Mr. Mitchell was formerly connected with the Consolidation Coal Co. at Jenners, Pa.; in the Elkhorn field in Kentucky and in Utah.

L. E. Linkous and Joseph Ponton on Oct. 2 purchased the Vulcan mine from the receivers of the Brady-Thacker Coal Co. The Vulcan mine was one of the largest owned by the defunct company and employs 75 men when operating at normal capacity. The sale was given the sanction of Judge George W. McClintic, of the U. S. District Court for the southern district of West Virginia. The mine will be placed in operation at once by the new owners, it has been unofficially announced.

Miners from the Pittsburgh area, according to J. A. Martindale, examiner of the U. S. employment office in Huntington, are turning to the mines in southern West Virginia and eastern Kentucky for employment.

September will rank as one of the best coal tonnage months the railroads serving southern West Virginia have ever enjoyed. The total output of the mines served by the Norfolk & Western for September will equal almost four million tons, breaking all previous records. The Pocahontas district shipped 1,737,550 net tons, but did not reach its record of May, 1922, when 1,919,289 tons were shipped. The Chesapeake & Ohio handled about five million tons and the Virginian transported over 600,000 tons.

The Mercantile Trust Co., Fidelity Trust Co., Robert Garrett & Sons, of Baltimore, and Spencer Trask & Co. and Hambleton & Co., New York City, have underwritten an issue of $4,500,000 Elk Horn Coal Corporation six-year 6½ per cent first mortgage bonds. The issue will be offered publicly in the near future. Proceeds will be used to retire the $6,000,000 issue of ten-year 6 per cent bonds of the corporation which mature Dec. 1, 1925. The New York Stock Exchange has received notice from the Elk Horn Coal Corporation of its intention to change the authorized issue of common stock from $22,000,000 of $50 par to 440,000 shares of no par value.

Negotiations are in progress for the purchase by the Ford interests of Detroit of about 50,000 acres of coal and timber land on Elk River, in Webster and Braxton counties. Among those active in conducting negotiations have been Former Senator W. E. Chilton, of Charleston; Cary Hines, attorney, of Sutton; G. E. Kesterton, of Huntington, and John Newton, of Sutton. Engineers and geologists representing the Ford interests have made a survey of the land and have reported their findings to the Detroit office.

WYOMING

The coal companies' payroll in the Rock Springs district on Oct. 1 was the largest to be distributed among the miners in the past year and a half. Steadily increasing railroad traffic, with resultant increased tonnage demands upon the mines supplying railroad coal, has had much to do with this increase in production.

The Inland Coal Co. has opened a wagon mine near Saratoga for production of domestic coal for local consumption.

The Blazon Coal Co. has added a night shift at its mine south of Kemmerer. Recently fifteen men were placed on night shift and on Oct. 1 several more men were employed for that shift. This is said to be the first night force to be worked in the Lincoln County field for many years. The Blazon camp, the youngest in the Kemmerer district, now employs more than 100 men underground.

No. 6 Mine at Sublet, owned by the Kemmerer Coal Co., which was the scene of Wyoming's last explosion disaster, was reopened for production recently. This mine has been on the non-producing list since the blast on Sept. 16, 1924, which claimed 39 lives. At that time the mine was badly wrecked and several months' work was required to place it in condition for operation.

CANADA

A seam of coal has been discovered at Tranquille, near Kamloops, British Columbia, and the Tranquille Mining Co. has been organized by local interests to develop it. Details as to size of seam and quality of coal are lacking. Efforts to develop a coal field at Chu Chua, near Kamloops, have been futile to date, owing to the poor quality of the coal and the lack of continuity of the seams.

The government of Nova Scotia has announced that the British Government has designated Sir Andrew Duncan, K.C., M.L.A., LL.B., formerly Coal Controller for the British Government and now chairman of the Advisory Committee of the British Mines Department, to be chairman of the Commission of Inquiry into the coal industry of Nova Scotia. The commission will be composed of a chairman and two associate members.

The Princeton (B. C.) Collieries are preparing to open a new seam of coal, which is expected materially to increase the company's output.

Charles McCarthy, a Toronto barrister, claims to have discovered coal deposits near Smoky Falls, in the Nipissing District of Ontario, within a short distance of railway facilities. For the past five years Mr. McCarthy has been conducting diamond drilling operations and states that he has struck a bed of coal at a depth of about 115 ft. varying in thickness from 7 to 11 ft. The known area of the coal, according to his statement, is about two miles long by three-quarters of a mile wide. The quality of the coal is described as between a bituminous and a lignite. Samples have been brought to Toronto for analysis.

Fred De Sieyes, manager of the Canadian Coal Sales Co. Ltd., of Winnipeg, Man., was on Oct. 2 committed for trial by the Winnipeg Police Magistrate on a charge of fraud in connection with the supplying of coal to the military barracks. He was released on bail for $50,000. A second charge for fraud in connection with a coal contract is pending.

Since the resumption of work in the coal mines of the British Empire Steel Corporation operations have been speeded up and maximum production is being maintained. The report for September shows a total output of 447,111 tons, as compared with 385,061 tons for September, 1924.

A. Slade, director and secretary of the British Colonial Coal Mines of Canada, Ltd., states that reports from the Larchwood basin property, in the Sudbury district of Ontario, have been so encouraging that the company has decided to sink a shaft.

Recent Patents

Mining Machine; 1,544,076. Edmund C. Treese, Huntington, W. Va., assignor to the Sullivan Machinery Co., Chicago, Ill. June 30, 1925. Filed Oct. 12, 1921; serial No. 507,344.

Mine-Car Coupling; 1,544,203. Andrew J. Baldwin, Pikesville, Ky. June 30, 1925. Filed April 26, 1923; serial No. 634,789.

Feeder and Scale for Kickback Dumps; 1,544,475. James A. Nolan, Bowerston, Ohio. June 30, 1925. Filed Sept. 30, 1924; serial No. 740,828.

Mine Hoist; 1,544,758. Frank E. Hulett, Cleveland, and Leif Lee, Youngstown, Ohio. July 5, 1925. Filed Oct. 15, 1920; serial No. 417,115.

Overturning Cage; 1,544,998. Daniel F. Lepley, Connellsville, Pa. July 7, 1925. Filed Oct. 22, 1921; serial No. 509,651.

Clamshell Bucket; 1,545,098. Edward L. Harrington, Erie, Pa., assignor to G. H. Williams Co., Erie, Pa. July 7, 1925. Filed Sept. 25, 1924; serial No. 739,942.

Process of Producing Coke; 1,545,620. Walter E. Trent, Washington, D. C. July 14, 1925. Filed Oct. 6, 1923; serial No. 667,046.

Coming Meetings

Electric Power Club. Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

American Welding Society. Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

American Iron and Steel Institute. Twenty-eighth meeting, Oct. 23, at Hotel Commodore, New York City. Secretary, Howard H. Cook, 40 Rector St., New York City.

American Society for Testing Materials. Committee meetings, Oct. 27-29, Hotel Cleveland, Cleveland, Ohio. Coal and Coke Committee at 2 p.m., Oct. 28; A. C. Fieldner, chairman.

Canadian Institute of Mining and Metallurgy. Annual western meeting, Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

Illinois Mining Institute. Fall meeting, Nov. 6 and 7 at West Frankfort, Ill. Secretary, Frank F. Tirre, St. Louis, Mo.

Harlan County Coal Operators' Association. Annual meeting, Nov. 18, at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

American Society of Mechanical Engineers. Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

Fourth National Exposition of Power and Mechanical Engineering. Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

Coal Mining Institute of America. Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

New Companies

The Conveyor Sales Co., Inc., New York City, has been chartered at Albany, N. Y., with 400 shares of no par value to manufacture coal and mineral mining machinery. **J. E.** and N. A. Hurwitz, Manhattan Beach, and C. L. Young, 532 West 111th St., New York City, are the incorporators.

The Connery Coal & Investment Co., an Illinois corporation, has qualified to transact business in Indiana. Harry V. Sherburne, Terre Haute, Ind., has been named state agent.

The Portsmouth Coal & Mining Co. has been chartered with an authorized capital of $10,000 to mine and sell coal. Incorporators are: John P., Ben H., Raymond F., Walter L. and Matilda Jones.

Articles of incorporation have been filed in Jefferson City, Mo., by the **LeFlore Coal Co.,** of Kansas City, Mo., capitalized at $12,000. W. L. A. Johnson, general commissioner of the Southwestern Interstate Coal Operators' Association, and his sons, L. W. Johnson and L. M. Johnson, were the incorporators. The company owns and is operating a shaft mine at LeFlore, Okla., where it has a branch office.

The Empire Coal Sales Corporation, Wilmington, chartered under Delaware laws, capital $50,000. G. W. Shillingford, president, has filed a certificate of statement and designation in the office of the Secretary of State of New York. The New York office is at 1 Broadway.

The Process Fuel Co., Covington, Ky., capital $50,000, has been chartered by E. O. Martin, W. G. Eston and E. P. Hettinger.

The Chelsea Coal Co., incorporated for $25,000, has been granted a charter by the Kansas State Charter Board. The company consists of L. E. Compton, W. O. Myers, and J. F. Downs, all of Pittsburgh, and J. A. Holland, of Mulberry, Kan. A steam shovel has been ordered and will be installed on 600 acres of land owned by the company near Chelsea, Okla. The Frisco will lay a switch to the mine. Sale of the coal will be through the Security Coal Co., with which Holland is connected, and which has an office in Kansas City. Myers is secretary and treasurer of the Pittsburg & Midway Coal Co.

The Ford Coal Co., Cleveland, Ohio., has been chartered with an authorized capital of $10,000 to mine and deal in coal. Incorporators are J. C. Herbert, J. F. Wieser, K. Wirching, M. L. Deaver and M. Rush.

New Equipment

Air Cone Prevents Spray From Wasting Paint

In the accompanying illustration is shown a type of pneumatic painting outfit that is rapidly gaining favor with mining companies particularly throughout the West and Middle West. It is manufactured by the W. N. Matthews Corporation of St. Louis, Mo., and can be employed for painting a great variety of surfaces both wood and metal ranging all the way from machinery to dwellings.

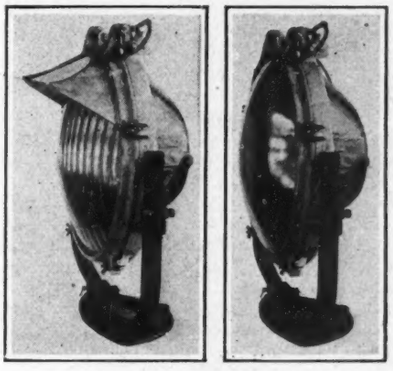
As normally constructed and here illustrated the outfit consists of a small gasoline or kerosene engine, an air compressor, a storage tank, a paint reservoir and a pneumatic brush or gun together with the necessary hose, regulating valves, pressure gages and the like. With an outfit of this kind one man can cover from four to six times as much surface as can a man with a hand brush. Furthermore, the paint is applied more evenly and is driven into every crack and crevice of the surface coated, thus affording a degree of weather protection impossible of attainment by hand-brush methods.

One of the chief advantages of this equipment is the "Volume F" gun. This is a patented air brush so constructed that a cone of air at high velocity completely surrounds or envelops the paint spray. By this means the mist or fog common to most pneumatic painting devices is reduced to a minimum and paint waste practically eliminated. This is particularly advantageous in outdoor work where paint sprays are liable to be affected by the wind.

There is no question but that mechanical painting is rapidly gaining in favor throughout the country. At first this method was applicable only to large single-color surfaces. With improvement in the equipment employed and a closer control of the paint spray has come a better appreciation of the advantages of this method of surface preservation and a wider adoption of pneumatic painting.

Floodlight Projectors Have New Features

More or less of a radical departure from usual floodlight projector design is represented by the projectors shown in the accompanying illustrations and manufactured by the Pyle-National Co. of Chicago. In these devices ventilation has been dispensed with and the case made tight by means of a lead gasket. Dust, gas, moisture and insects are thus entirely excluded.



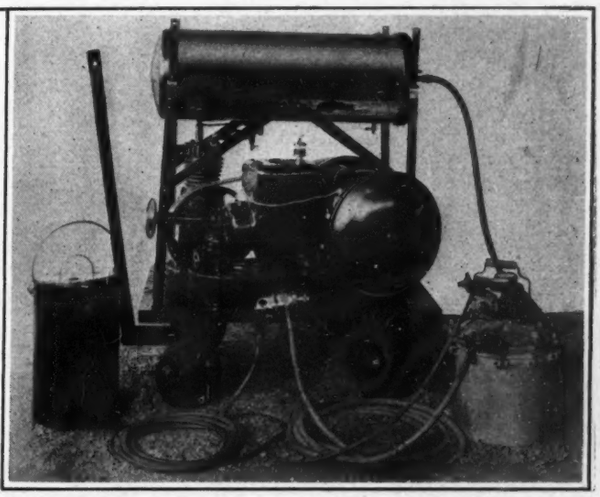
Tight-Case Projectors

These projectors, which may be turned and tilted into any position, are made air tight, thus effectively excluding all foreign material. Ventilation of these projectors is unnecessary.

The case is of cast aluminum alloy fitted with a drawn aluminum back and small parts of either this metal or bronze. Either crystal or "non-glare" glass reflectors 23 in. in diameter are provided and rectangular divergence lenses may be employed if desired. This projector is the latest addition to a line of similar lighting devices built by this manufacturer.

Complete Paint Outfit

Engine, compressor and air tank are all permanently mounted on an easily portable truck. The balance of the equipment, paint container, hose, gun and the like may also be placed on this truck for transportation over short distances if desired.



Motor and Control Passes Bureau Tests

A new type of totally inclosed motor with control, especially adapted for use in gaseous mines and designed by the General Electric Co., has successfully passed the tests of the U. S. Bureau of Mines. This equipment, the first to pass the tests, will be approved by this bureau as a permissible motor when used with a suitable mine pump or other device to which it may be applied as a means of drive. The primary use for which the motor was designed is for driving mine gathering pumps, but it is expected that other uses will be developed.

The motor is a direct-current machine and, so far, has been made in but one rating—5 hp., 900 r.p.m., 550 volts, compound wound. Other ratings, however, are to be designed and submitted for approval as required. The General Electric Co.'s designation for the new motor is Type ME-6, Class BM construction.

The development of the motor followed insistent demands from the mining industry for a permissible motor for small pump work. The construction is such that all current-carrying parts are totally inclosed. Wide machined flanges are used at all joints, rather than the baffle plates for cooling escaping gases from internal explosions. There are no through bolt holes, all bolt holes being bottomed. The control switch is built on the same principle and is mounted directly on the motor.

The motor is started by being thrown directly across the line. No fuses are used in the control circuit, protection being secured by a thermal overload relay.

When the cover is removed from the controller all circuits are automatically de-energized except two shielded terminals of the incoming lines. Thus it is impossible to start the motor or draw an arc with the controller cover removed unless it is done maliciously.

By means of this construction no heat, from any cause, whether sparking or explosion, can be transmitted to the outside of the motor in such intensity as to ignite any gases surrounding the equipment.

Safety Switch Design Gives Full Protection to Operator

A study by Westinghouse Electric & Manufacturing Co. of industrial switch requirements brought to light many definite ideas concerning the features required in a safety switch that was to give full protection to the operator and motor under all conditions.

As a result of this survey, the Westinghouse WK-55 full safety industrial switch was designed, embodying many important and practical features. The result is a switch that can be designated as both "fool proof" and "ignorance proof."

One of the problems which had to be contended with was that no live parts be within reach of the operator when he finds it necessary to change fuses. This requirement led to the development of the distinctive double door construction of the WK-55 switch. Within the main door of the switch is a smaller door giving access to the fuse compartment. This fuse-compartment door is interlocked with the operating handle in such a way that it will not open until the switch is thrown to the off position. In this position, even with the door open, no live parts are accessible and as long as the door remains open the switch can not be thrown on.

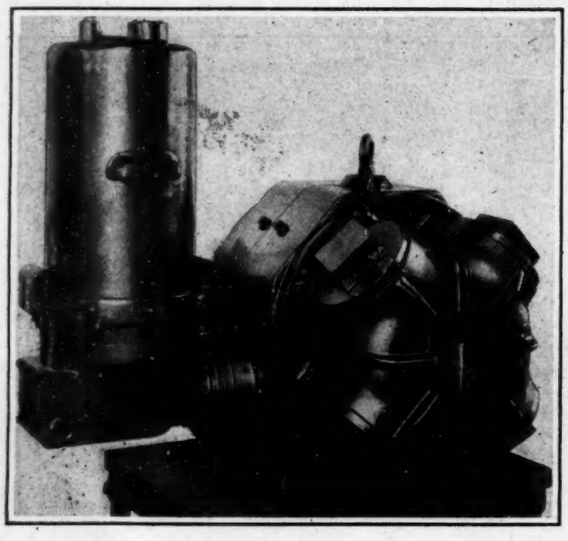
While the fuse-compartment door gives access to the fuses only, the outer door covering the entire switch inclosure is arranged for padlocking so that it can be opened only by an authorized person. This door can thus be opened for inspection and testing without interrupting the service.

Another requirement to be met was the simplification and elimination of parts within the switch box that would be subject to failures and thus form a hazard for dangerous short circuits. This problem was solved by designing a new make-and-break mechanism that is entirely contained in the operating handle outside of the cabinet. This innovation removes the danger of loose parts coming into contact with current-carrying parts of the switch and leaves more space for wiring.

Probably the most difficult requirement was that of developing an arc quencher of simple design that would serve to extinguish the arc quickly and efficiently when the circuit was opened. Westinghouse engineers studied this problem and evolved a quencher which consists of metal laminations, separated by layers of insulation and air space. As the blade traverses the quencher, the arc is broken into a series of sparks that are cooled by the metal plates and by the air currents between them. As the blade passes through the quencher, the arc is dissipated and cooled to such an extent that the current drops to zero and the circuit is interrupted without danger or damage. The arc quencher of the WK-55 switch is capable of breaking circuits carrying from 50 per cent more current in the larger sizes to 300 per cent more in the smaller sizes than the rated amperes of the switch, even at 600 volts.

A Safe Industrial Switch

Besides being safe to operate, a switch should be constructed so that it will not short circuit or start fires. Both personal injury and fire hazards are eliminated by the construction of this switch.



Inclosed Motor And Control

Here is a motor and starter designed for pump service in gaseous mines. It is started by being thrown directly across a direct-current 550-volt line. A thermal relay protects equipment from excessive overloads.

Industrial Notes

Foote Bros. Gear & Machine Co., Chicago, Ill., is about to place on the market a new series of reduction units equipped with the Sykes generated continuous tooth, herringbone gears. They will also publish a list of Sykes herringbone gears, which gives standard sizes and prices.

A one-reel motion picture entitled "Letting Dynamite Do It," has just been made by the explosives department of **E. I. du Pont de Nemours & Co.**, Wilmington, Del., and can be had for distribution on application to the company. The scenes show the use of explosives in many lines of industry and under many conditions without particular reference to coal.

The Joseph Dixon Crucible Co., Jersey City, N. J., has added an aluminum graphite paint to its paint line. This paint is for use on all metal surfaces exposed to weather, gases, acids and smoke. It is composed of aluminum combined with the flake silica-graphite pigment and boiled linseed oil. Aluminum when used for paint making is of flake formation and, when combined with the Dixon pigment, each flake laps over, after the manner of fish scales, forming a covering of great elasticity and durability.